Ontario
Health Quality Ontario

QUALITY MONITOR

HEALTH QUALITY ONTARIO

2011 REPORT ON ONTARIO'S HEALTH SYSTEM

The quality of our health system is the responsibility of every Ontarian. We hope this report will help you understand the publicly funded health system better, and give you the information you need to keep up pressure for improvement.

After all, it's your health and your health system.

This report is prepared in partnership with

ICES Institute for Clinical Evaluative Sciences

QUALITY MONITOR:

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1.1 Executive summary

Ontarians are fortunate to have a publicly funded healthcare system that provides a comprehensive range of services for all. To help ensure the system is working properly, the provincial government has expanded the mandate of the Ontario Health Quality Council, and to mark this transition, the organization has registered the name "Health Quality Ontario" (HQO) under the Business Names Act and now conducts its affairs under this name. In addition to monitoring all aspects of the system and reporting to the people of Ontario on its quality, HQO has been charged with supporting efforts to improve quality across all healthcare settings, making recommendations on standards of care based on clinical practice guidelines and protocols, and making recommendations on how healthcare services are funded. All of these activities aim to accelerate the adoption of best available scientific evidence in the healthcare system.

Our sixth annual report — Quality Monitor — examines Ontario's healthcare system with our most critical eye. We note changes for the better or for the worse and report them to you. More importantly, we compare how we are doing to the best results elsewhere and provide an opinion about whether quality is good or needs improvement.

How we completed this report

HQO routinely monitors indicators and data sources used throughout Ontario, Canada and internationally, and works with its Performance Measurement Advisory Board to select indicators for this report. Data is drawn from sources that include Ministry of Health and Long-term Care (MOHLTC) databases, Census Canada, international surveys from the Commonwealth Fund and many others. The Institute for Clinical Evaluative Sciences (ICES) helped us conduct many of the data analyses. Researchers, clinical experts and healthcare executives reviewed our findings for accuracy and validity.

Key features of this year's report

Broader coverage of the nine attributes of quality

The nine attributes that Ontarians tell us reflect a high performing health system include: accessible, effective, safe, patient-centred, equitable, efficient, appropriately resourced, integrated and focused on population health. This year, we have added new indicators to increase our insight into these nine attributes across all sectors of healthcare. They include:

- Additional international comparisons on patient experience in primary care
- Expanded analysis of hospital infections and adverse events
- Expanded coverage of mental health, including suicide, intentional harm and depression

Compact format

We describe the entire healthcare system in 35 themes, with approximately two pages per theme. Most indicators have a mini-graph to indicate progress or lack of improvement over time and a three-to-five-sentence description of our interpretation of the data. Information on how indicators were defined and calculated and more detailed tables of actual data points can be found in the technical appendix to this report.

Mini-summaries for leaders and staff in different sectors and people with different conditions

There are two-page summaries of key findings for hospitals, LTC, home care and primary care, as well as brief summaries for cardiovascular disease, diabetes, mental health and cancer. Each summary includes questions to ask of leaders or caregivers for self-reflection. Summaries of key differences for each local health integration network (LHIN) have also been expanded upon this year.

Root cause analyses and change ideas

Traditional public reporting simply gives indicator results and whether they are above or below average. Readers, however, are left wondering why these problems exist and what can be done about them. To counter this, we have included a root cause analysis with each theme, as well as ideas for improvement related to the root causes, as identified in the literature.

Best practice stories

We have reported on local stories of improvement, selecting those that had substantial improvement over the past year and had a clear aim, measures, change ideas and run charts. These success stories are closely linked to the key findings of the report, demonstrating that improvement is possible.

Health Quality Ontario's key findings

This year, Health Quality Ontario (HQO) identified both significant achievements and significant challenges in Ontario's healthcare system. Achievements include reductions in wait times in the emergency department, for many surgeries and for CT scans, as well as improvements in primary care access, patient outcomes for coronary artery disease and smoking rates. However, many of these rates are still far from optimal. Challenges include a continuing problem with patients occupying alternative level of care (ALC) beds and wait times that are still too long for long-term care. In addition, Ontario has long waits for urgent cancer surgeries and specialist appointments and has not improved patient outcomes for congestive heart failure and chronic obstructive pulmonary disorder (COPD). In many instances, progress is linked to a clear strategy to improve results, and lack of progress can be attributed at least in part to the lack of such a strategy.

Overall, there are several success factors for system-wide quality improvement, including leadership and accountability, measuring and reporting on performance, following evidence-based practices, innovative models and processes for strategic system improvement, ensuring providers have access to up-to-date training and resources, change management, patient and family engagement and appropriate capacity throughout the healthcare system.

Broadly speaking, this report identifies three system areas that need to be addressed to improve the quality of Ontario's healthcare system: access to healthcare, chronic disease management and keeping the population healthy. It will be critical to have progress across the different success factors and all three system areas to significantly improve health outcomes and mitigate healthcare costs. HQO has summarized the province's achievements and challenges and indicated specific strategies for improvement for each of the three system areas below.

HOSPITAL

LONG-TERM CARE

HOME CARE

PRIMARY CARE

Access to healthcare

HQO measures access to healthcare by looking at how long people have to wait to get the medical attention they need. This year, some wait time indicators improved dramatically — but big problems remain.

In the **emergency department**, the 90th percentile length of stay (the maximum amount of time nine in 10 patients spend in the emergency department) decreased by two hours for high complexity patients and by 30 minutes for low complexity patients in the past two years. Length of stay is still well above target for high complexity patients — 12 hours versus eight hours — but progress has been made. Provincial initiatives that have contributed to these results include the ED Pay for Results Program and public reporting of emergency department wait times on the Ontario Wait Times website. In addition, many hospitals have adopted Lean process improvements to enhance efficiency and flow, encouraged by the ED Process Improvement Program (ED PIP).

The average wait time to **long-term care** (LTC) placement is 3.5 months — a length of time that is far too high. When people wait in their own homes for a bed in an LTC home, they may not be receiving all of the care they need and, as a result, may experience declines in health and quality of life. When people wait for admission to an LTC home from hospital, that has ripple effects through the health system. These individuals may be occupying ALC beds in hospital (i.e. are in hospital even though they are better served elsewhere), which delays new hospital admissions and can contribute to increased emergency department wait times. Indeed, one in six people in hospital are ALC. This problem has not been improving as of 2009/10, and represents a major inefficiency in the system.

Although LTC wait times are still far too high, they have stopped increasing for the first time since 2005. This is a promising trend, but it is everyone's expectation that these rates now must start to decrease. Going forward, it will be important to address all aspects of this complex problem and to ensure adequate resources exist to support providers and patients at every level of the healthcare system — in hospital, at home and in LTC. It will also be important for Ontario to evaluate the Aging at Home Strategy, in place since 2007, which makes a wider range of home care and community support services available to enable people to continue leading healthy and independent lives in their own homes.

When it comes to **primary care**, Ontario has seen steady improvement in the percentage of people with a family doctor since 2005 and now ranks among the best in Canada. This is likely due in part to investments in medical schools that increased the number of spots available, the introduction of health professionals such as nurse practitioners who can take on some physician responsibilities, the establishment of family health teams and the expansion of community health centres. However, 6.5% of adult Ontarians don't have a family doctor and 3.3% are actively seeking one. These percentages are even higher for people with lower incomes and those who live in northern Ontario. The province also needs to do a better job of making sure people can schedule an appointment quickly. Fewer than half of Ontarians who were sick were able to book time with their doctor on the same or next day. There have been no changes in recent years, and both Canada and Ontario rank poorly on this indicator compared to other countries.

The situation is even more serious for wait times to see a **specialist**. Half the people who are referred to a specialist wait four weeks or longer for an appointment. Canada's and Ontario's standings are the worst among 10 major developed countries and need to improve.

Ontario is getting better at completing a range of **surgeries and other procedures** within provincially mandated targets, despite increasing demand. The 90th percentile wait times for hip replacements, knee replacements and cataract surgeries have been cut by more than half since 2005. Meanwhile, the 90th percentile wait time for CT scans has decreased from 2.5 months to about one month over the same time period. Ontario's improvements in wait times for surgeries and other procedures can be attributed to public reporting on the Ontario Wait Times website, creation of a provincial information system to track wait times, funding for increased volumes of surgeries and investments in new CT equipment. That said, there is still room for improvement in two important areas. The 90th percentile wait time for cancer surgeries decreased from 2005 to 2008, but hasn't improved in the past two years and currently sits at 51 days. The 90th percentile wait time for MRI scans has remained at about four months since 2005 (113 days in 2010), despite huge increases in the number of scans performed. In the future, it will be important to ensure CT and MRI scans are done only when needed.

Strategies for improvement

In the **emergency department**, change ideas include developing better care coordination and moving patients to the right place as soon as possible so they are not occupying beds unnecessarily. In addition, hospitals can make specific process improvements within the emergency department, including creating a fast-track area for less serious cases and changing the location of supplies and equipment to maximize efficiency. They can divert non-urgent cases away from the emergency department to other alternatives. And the system as a whole can focus on improving primary care services so patients are less likely to require emergency care. For more information, see section 2.1.

To shorten wait times for **long-term care** homes, the province needs to ensure that enough supportive housing and assisted living facilities are available as an alternative to LTC for people who are able to live more independently — especially in high-demand regions. Home care needs to be more available as well, with flexibility on the hours allotted to families based on their needs. In addition, when patients enter hospital, it's important to avoid jumping to the conclusion that they need LTC until they have been given time to recover, and to keep them as active as possible to prevent a decline. For more information, see section 2.4 and 6.2.

To maximize **primary care** and **specialist** capacity, providers can take many measures, including adopting advanced access scheduling, improving office efficiency and implementing a well-functioning electronic medical record (EMR) system. For more information, see section 2.2.

Part of the solution to the wait time challenge for **surgeries and other procedures** is prevention. If Ontario can slow down deterioration of health so that the need for surgery is reduced, this can have a positive impact on wait times. There are also major opportunities to streamline the scheduling and organization of services to reduce wait times, as has been done successfully in many centres. Other change ideas include implementing appropriate criteria to ensure that patients truly require surgery or a specific test, and ensuring at least some excess capacity for services to help handle fluctuations in demand. For more information, see section 2.3 and 6.3.

1.1

Chronic disease management

Ontario has had mixed results when it comes to chronic disease management. The province has experienced steady improvements in the management of coronary artery disease and can be cautiously optimistic about diabetes, thanks to reductions in hospital admissions and complications. However, congestive heart failure and COPD remain significant challenges. For more information about chronic diseases in Ontario, see the Disease Summaries sections in this chapter.

In the area of **coronary artery disease**, heart attack mortality within 30 days and between 30 days and one year have decreased over the past seven years. About half as many people per capita are readmitted to hospital following a heart attack. One-third as many people per capita are admitted to hospital for angina. There is strong scientific evidence that access to revascularization (cardiac bypass or stent) can reduce mortality and disability for people who need this type of care, and Ontario has a highly structured regional system for delivering these services. The appropriate use of drugs such as statins may also be contributing to these improvements.

Use of statins and angiotensin-converting enzyme inhibitors (ACEIs)/ angiotensin-receptor blockers (ARBs) has also improved among elderly people with **diabetes**, with the application of both at once nearly doubling over the past seven years. This may be a factor in the one-quarter decrease in hospital admission rates and nearly one-third decrease in serious complication rates (within a year) people with diabetes have experienced over the past seven years. On the other hand, when it comes to on-going management of diabetes, there has been no improvement in the percentage of people with diabetes who had an eye exam in the past 12 months. This number is stagnant at one in two.

Furthermore, there has been only a slight decline in hospitalizations for **congestive heart failure** in the past four years (down to 52 from 54 per 100,000 people). About one in five people are readmitted for congestive heart failure, and this number has not changed at all over the same time period. Finally, more than one in three patients admitted to hospital for congestive heart failure die within a year, and this indicator has not improved in seven years.

Similarly, there has been just a slight improvement in **COPD** hospital admission rates in the past four years (down to 84 from 92 per 100,000 people), and COPD is now the most common ambulatory care sensitive condition — where appropriate care in the community may prevent hospitalization. As with congestive heart failure, there has been little change in readmission rates in the past four years. About one in five people are readmitted for COPD.

A coordinated strategy, such as the one in place for revascularization (bypass or stent), could be beneficial in tackling other areas, including congestive heart failure and COPD.

Strategies for improvement

Disease registries can help practitioners better monitor how well patients with chronic diseases are doing and provide timely follow-up. Such a registry is an important part of the province's Diabetes Strategy. In addition, flow sheets in patient charts, reminder systems and well-functioning EMRs can help healthcare providers deliver more consistent care to improve chronic disease management.

People with chronic conditions can benefit from access to professionals with special skills, including pharmacists to review their medications, dietitians to provide advice on nutrition and primary care providers to monitor key health indicators. The best case is when people have access to a team that meets all their health-related needs and engages them in self-management by helping them develop their own action plans and set personal goals. For more information, see section 3.2.

Meanwhile, making sure that patients receive the right medications while they are in hospital and after they are discharged can, as already discussed, help with the management of coronary artery disease and diabetes. Hospitals can increase the availability and use of standardized admission orders, discharge checklists, order sets or electronic health records (EHRs) that guide clinicians' decisions and generate clinical reminders. Also critical to a smooth transition from hospital back into the community is ensuring the seamless transmission of patient information to the primary care provider — ideally directly into the patient's EMR. For more information, see section 3.1 and 8.1.

These are elements of a comprehensive chronic care model. For more information about Ontario's framework for preventing and managing chronic disease, see www.health.gov.on.ca/english/providers/program/cdpm/index.html.

Keeping the population healthy

One of the best ways to manage healthcare costs is to implement effective programs that help keep the population healthy. Ontario has had major success in reducing the smoking rate by 25% since 2001, but continues to struggle to improve physical activity and reduce obesity.

Policy changes such as the 2006 *Smoke-Free Ontario Act* have likely contributed to a steady decline in smoking rates and exposure to second-hand smoke over the past six years, and Ontario is now among the best-performing provinces in Canada on these indicators. The current provincial smoking rate is 19%, however, meaning that nearly one in five people across Ontario continue to smoke. Furthermore, people with low incomes or less education are twice as likely to smoke as people with high incomes or a post-secondary education. More needs to be done to address these specific population groups.

The rate of obesity has increased from 16% to 18% over the past eight years. Just one in two Ontarians get enough exercise and this number has remained the same since 2007. Finally, fewer than half get the recommended five or more servings of fruits or vegetables every day, with no major improvement since 2003. A coordinated obesity strategy may be part of the solution.

Early screening for illness is another important component of population health. Ontario's aggressive ColonCancerCheck campaign targeted screening for one disease that can be much more successfully treated when caught early. Screening for colon cancer has increased by 68% in the last four years, with nearly one in three people aged 50 to 74 taking a fecal occult blood test in 2009. However, many other types of screening can help the province detect additional diseases sooner, treat them earlier and improve people's survival rates.

As already suggested in relation to smoking, there are still huge inequalities in the province. For example, income levels affect the likelihood of having a heart attack, with the poorest Ontarians 36% more likely to experience an acute myocardial infarction than the richest Ontarians. Meanwhile, the lowest-income Ontarians have a 32% higher rate of injury-related hospitalization compared to the highest-income Ontarians. Ontario is still a long way from achieving equitable health outcomes.

Strategies for improvement

Toronto stepped up ahead of the rest of the province to prohibit smoking in most public places and workplaces (1999), then in restaurants, dinner theatres and bowling centres (2001), and finally in bars, billiard halls, bingo halls, casinos and racetracks (2004). Toronto currently has the province's lowest smoking rate, at 13%, so it appears these types of measures are effective.

Other change ideas include improving access to smoking cessation programs, making it easier for people to use nicotine replacement therapies, "de-normalizing" unhealthy behaviours and addressing the range of constraining and enabling factors that influence peoples' health and access to care. It will also be important to close knowledge and awareness gaps and make sure healthy choices are obvious and accessible. The Ministry of Health Promotion and Sport will have an important role to play in these types of initiatives. For more information, see section 9.1.

To improve prevention, it may be helpful to develop provincial registries and EMRs/EHRs to remind patients when they are due for screening tests, to encourage adherence through public awareness campaigns and culturally sensitive screening programs, and to reach out to vulnerable and hard-to-reach populations through mobile care units and access to vaccinations outside primary care offices. For more information, see section 9.4.

Other provinces sometimes have ideas that may translate well to Ontario. In British Columbia, as just one example, it has been suggested that the province limit marketing of unhealthy food and beverages to children, add nutritional labeling on menus, tax unhealthy choices, expand wellness programs in the workplace and revitalize recreation facilities, among other measures[1].

Finally, as recommended last year, strategies tailored to the most vulnerable populations may speed up progress on chronic diseases and help to improve equity in the province's healthcare system. Making it easier for lower-income individuals to access healthy food, offering free physical activity programs and implementing healthy community initiatives can contribute to a healthier province and lower healthcare costs over the long term.

[1] BC Healthy Living Alliance. "Healthy living in BC — the next generation." January 2011. www.bchealthyliving.ca

1.2 Quality improvement summary

KEY SUCCESS FACTORS FOR SYSTEM-WIDE QUALITY IMPROVEMENT

The Quality Monitor identifies not only problems with quality, but also the root causes of these problems and ideas for improvement. For each individual indicator, specific ideas have been identified from the scientific literature, best practice stories and successful quality improvement campaigns around the world. These ideas fall into several broad categories of success factors for system-wide improvement identified below. Ensuring that all of these success factors are adopted in a coordinated fashion is essential.

1. Leadership and accountability

"The strategic plan? Isn't that something to do with head office?"

"We had great ideas for improvement, but no one listened to us!"

Change is hard. Change can generate fear of the unknown. Changes that result in a shift in roles can generate resistance, if one group perceives it as a loss. Successful change requires strong leadership that involves:

- Creating a compelling vision for quality, and specific targets and timeframes for completion that describe that vision in tangible terms. Leaders can communicate the vision and inspire people to achieve it.
- Describing a clear strategy. This involves identifying those activities or evidence-based best practices that have the biggest impact. Leaders set clear expectations and clear accountability for all levels of the organization for implementing these activities, where each individual understands his or her role in achieving the vision.
- Creating a culture of quality improvement, with an emphasis on learning, trying new ideas, and being encouraged to report quality problems instead of being punished. Leaders develop conflict management skills in the organization to manage resistance. Leaders engage people at the front line in the change process. Leaders find champions to promote change among their peers (especially important for physicians). Lastly, leaders celebrate successes and facilitate the sharing of best practices.

2. Well designed processes, systems and teamwork for delivering healthcare

"I can't find those lab results — just run the test again."

"Why do I have to give the same information to five different people?"

Healthcare is a complex system that involves many tasks carried out by different people in different organizations. Every time one provider hands off care to the next, errors or miscommunication can occur. Over time, some steps become redundant. Often, sequences of tasks differ among different organizations, individuals, or even different floors or shifts within one organization. This creates confusion or delay, and leads to inconvenience, waste, poor care or harm.

A recurring theme in this report is the need to streamline processes. Specific examples include eliminating redundant steps, standardizing processes, doing things in parallel instead of in sequence, making processes error-proof, making defects easy to spot and fixing them early before they are passed on. Teamwork can be strengthened by establishing good processes for handing off care, consistent routines for communication and role clarity.[1]

Many healthcare organizations are now using process improvement methods such as Lean (elimination of waste) and Six Sigma (elimination of defects). It is important to ensure that organizations have staff with deep expertise in the use of quality improvement methods who can mentor or lead process improvement activities.

3. Measurement and reporting

"I thought we were doing a great job until I saw our data."

"You can't manage what you can't measure."

Quality measurement helps identify areas that need improvement, make the case for change, identify the root cause of problems, and monitor whether an intervention to improve quality is working. Ontario has a wealth of data on quality, but there are still huge gaps to be filled (see the data advocacy section, see 1.12). Reporting this information to the public is important, because public comparisons between institutions can spur leaders to outdo their peers. Although Ontario already reports on many wait times and safety indicators by institution, there are other opportunities to expand public reporting further.

Ontario, however, is weak in its ability to provide instant feedback on quality performance to individual health care providers or teams. This feedback is essential to getting people engaged about quality and to allow improvement teams to change their strategy if it is not working. Developing instant feedback will require that electronic health records are carefully designed for this purpose.

4. Tools to address information overload

"Trying to keep up with the literature is like drinking from a fire hose."

In 2009, 1.5 million articles were published in the area of science, technology and medicine.[2]

Today's healthcare providers are bombarded with information. Best evidence often isn't followed, resulting in poorer outcomes and wasted resources. This can be because people forget (the brain has natural limits on memory) or there are distractions (too many competing demands for attention), no time to read all the evidence, and difficulty applying different guidelines simultaneously to complicated patients with different conditions.[3] Practice guidelines tell providers what to do, but cannot change practice on their own.

[1] Ontario Health Quality Council. Improvement guide. 2009. www.ohqc.ca/pdfs/qi_guide.pdf; accessed February 25, 2011.

[2] Ware M, Mabe M. The STM report. An overview of scientific and scholarly journal publishing. International Association of Scientific, Technical and Medical Publishers. 2009.

[3] Grol R, Wensing M. What drives change? Barriers to and incentives for achieving evidence-based practice. Med J Aust. 2004;180(6 Suppl):S57-60.

HOSPITAL
LONG-TERM CARE
HOME CARE
PRIMARY CARE

Practice tools can help address these problems. They include checklists, standardized care orders, flow sheets, appropriateness criteria, reminder systems and other decision support tools. These tools can be verbal, paper or electronic-based, and can prompt providers to perform or avoid a particular action, help decide on a drug or test, or document if a best practice was followed.

5. Verifying and upgrading providers' clinical skills

"When was the last time you did that procedure?"

"I've lost my touch..."

Clinical skills are the ability of health care providers to evaluate a clinical problem or execute a task that may require knowledge, critical thinking, experience or technical skills. There may be gaps in skills if: the original training was inadequate; the task is done infrequently and skills deteriorate over time ("use it or lose it"); the technique changes but there is no opportunity to upgrade skills; or, there is no mechanism to spot and fix problems with clinical skills. Traditional activities like lectures do not address well these problems. Other approaches include: formal recertification programs; direct observation of providers performing specified tasks when the technique is taught, when staff are hired, and at regular intervals); and patient simulation labs. Planners can also organizing care so that certain services are delivered only by institutions or individuals that maintain a minimum volume.

6. Patient and family engagement

"No one ever told me about my options!"

Quality improvement depends on patients being engaged in their care. This means that they understand the importance of healthy living and the nature of their illnesses. They know their treatment options and make informed choices which fit their preferences and lifestyle. They feel encouraged to ask the right questions about their care — what is happening to them and why, and are not afraid to point out problems with their care (e.g. when someone forgets to wash their hands). Patient education and health promotion are helpful but even more powerful are patient self-management skills.[iv] When individuals feel they are in control of their health, they are more likely to continue taking the right drugs or adopt healthy living habits.

Health and health behaviours are generally worse for people with low income or education, or in certain communities. It is important to ensure that patient engagement activities are tailored to these groups as well as those from different language or cultural groups, and that these activities are coordinated with other activities that address broader determinants of health (e.g. housing, employment, healthy communities).

7. The right policies and incentives for quality

"Is there any reason why we should do things differently?
Why should I change?"

Incentives and policies can motivate change. People want to improve quality if they are recognized and appreciated for their efforts; can see tangible results; and feel supported. Providers embrace quality improvement initiatives when the outcome is not only better clinical care but also reduced wasted time or administrative hassle. "Herd behaviour" is important for both patients and providers. Seeing a peer choose the right treatment can influence a provider to do the same. For patients, policies like smoking bans which "de-normalize" unhealthy behavior appear to be effective. Policies on how services are funded represent another lever for change. Many believe that funding should be tied to quality. For example, extra costs resulting from poor quality should be borne by the organization that provided and was funded for that care.[v]

8. The right capacity throughout the healthcare system

"Why do we have wait lists for some services and but not for others?"

Supply and demand for services need to be matched to reduce both waste and unnecessary wait times. The health care system needs to be constantly estimating what the future demand is for different type of services in different communities and then making sure it has the right amount of equipment, programs or healthcare providers to meet this demand. When managing wait lists, it is best to have at least some excess capacity to allow the system to handle random surges in demand. Estimates of demand should also consider opportunities to reduce demand, through better prevention and reduction of inappropriate use of services.

[iv] Coleman MT, Newton KS. Supporting self-management in patients with chronic illness. Am Fam Physician. October 15, 2005;72(8):1503–1510.
[v] www.leapfroggroup.org/for_hospitals/leapfrog_hospital_quality_and_safety_survey_copy/never_events. Accessed April 14, 2011.

1.3 Attributes framework

The attributes of a high-performing health system.

ONTARIANS WANT THEIR HEALTH SYSTEM TO BE:

ACCESSIBLE

People should be able to get timely and appropriate healthcare services to achieve the best possible health outcomes. For example, when a special test is needed, you should receive it when needed and without causing you extra strain and upset. If you have a chronic illness such as diabetes and asthma, you should be able to find help to manage your disease and avoid more serious problems.

EFFECTIVE

People should receive care that works and is based on the best available scientific information. For example, your doctor (or healthcare provider) should know what the proven treatments are for your particular needs including best ways of coordinating care, preventing disease or using technology.

SAFE

People should not be harmed by an accident or mistakes when they receive care. For example, steps should be taken so that elderly people are less likely to fall in long-term care homes. There should be systems in place so you are not given the wrong drug, or the wrong dose of a drug.

PATIENT-CENTRED

Healthcare providers should offer services in a way that is sensitive to an individual's needs and preferences. For example, you should receive care that respects your dignity and privacy. You should be able to find care that respects your religious, cultural and language needs and your life's circumstances.

EQUITABLE

People should get the same quality of care regardless of who they are and where they live. For example, if you don't speak English or French it can be hard to find out about the health services you need and to get to those services. The same can be true for people who are poor or less educated, or for those who live in small or far-off communities. Extra help is sometimes needed to make sure everyone gets the care they need.

EFFICIENT

The health system should continually look for ways to reduce waste, including waste of supplies, equipment, time, ideas and information. For example, to avoid the need to repeat tests or wait for reports to be sent from one doctor to another, your health information should be available to all of your doctors through a secure computer system.

APPROPRIATELY RESOURCED

The health system should have enough qualified providers, funding, information, equipment, supplies and facilities to look after people's health needs. For example, as people age they develop more health problems. This means there will be more need for specialized machines, doctors, nurses and others to provide good care. A high-performing health system will plan and prepare for this.

INTEGRATED

All parts of the health system should be organized, connected and work with one another to provide high quality care. For example, if you need major surgery, your care should be managed so that you move smoothly from hospital to rehabilitation and into the care you need after you go home.

FOCUSED ON POPULATION HEALTH

The health system should work to prevent sickness and improve the health of the people of Ontario.

1.4 Hospital sector summary

ACUTE CARE HOSPITALS: summary for boards, CEOs, senior management and clinical leaders

Topic area	Key facts	Questions to consider
1. ALC (section 6.2)	• Approximately one in six hospital beds in Ontario are filled with patients who should be cared for somewhere else. This problem has not improved in the last year (2009/10). This represents a major inefficiency in the health care system.	• Are we working with community care access centres (CCACs) to apply the Home First approach, where frail individuals admitted to hospital go home with the necessary home care support, where they can then make a decision about whether they need to be in a LTC home? • Can we identify people at risk for being ALC earlier (e.g. when they visit the emergency department for the first time), so that home care services can be arranged before their health deteriorates? • Are we using rehabilitation resources to help patients regain their function and return home to live as independently as possible? • Are we working with CCACs and local health integration networks (LHINs) to promote supportive housing models or similar options for frail individuals? • What are the characteristics of ALC patients that are difficult to place into LTC homes? What services need to be developed in the community or in LTC homes to serve them?
2. Emergency department (ED) wait times (section 2.1)	ED wait times have improved but are still well short of provincial targets. It is the admitted patients who are least likely to be admitted within the recommended timeframe. Specifically: • The maximum time nine in 10 patients spend in an ED decreased in the last two years by two hours for high complexity patients (from 14 to 12 hours), and by half an hour for low complexity patients (from 4.8 to 4.3 hours). The target is 8 and 4 hours respectively. • One in 20 Ontarians who visit the emergency department leave without being seen by a physician, likely because they were tired of waiting. This figure has been improving. • Among patients admitted to hospital from the ED, half of them waited more than three hours for a bed, and this has not improved in the past two years. Also, only 41% of these patients are served within the recommended timeframe, compared to 81% overall. • Ontario and Canada fare poorly on international comparisons of ED waits.	• Are we moving patients who do not need to be receiving care in the hospital to the right place as quickly as possible (see above)? • Have we considered all the different ideas for improving patient flow within the ED (e.g., fast-track area for less serious cases, improved layout by changing the location of supplies and equipment to maximize efficiency, chairs for acute patients, flexible human resources scheduling and information systems to track patients and results)? • Do we have a organization-wide contingency plan when the ED reaches critical gridlock? • Have we considered diverting non-urgent cases away from the ED to alternatives that are most appropriate for their conditions? Are we redirecting people who are using the ED for their main source of care to family doctors who are taking new patients? • Can we work with other stakeholders to improve primary care services so patients are less likely to need ED care?
3. Surgical and CT/MRI wait times (section 2.3)	Wait times have decreased for many procedures overall, but there is still room to improve, especially for high-priority cases for all surgeries (particularly cancer) and MRI. Specifically: • The 90th percentile wait for hip or knee replacement is just under seven months; for cataracts, four months; and for CT scans, one month. Waits are less than half of what they were in 2005. • The 90th percentile wait for MRI is four months — same as it was in 2005, despite a nearly three-fold increase in the number of scans being done. • In the case of general surgery and surgery for cancer, cataracts, coronary artery bypass, angiography and percutaneous coronary intervention (e.g. cardiac stents), 93% to 99% of elective cases are done within the recommended time frame. However, for urgent cases, the percentage done within the recommended time is much lower: for cancer,67%; cataract, 66%; general surgery, 83%; coronary bypass, 86%; angiography, 85%; percutaneous coronary intervention, 85%. • CT and MRI scans are exceptions to the above trend; urgent cases are more likely to be done within the recommended time frame than elective cases.	• Are there poor hand-offs, poor communication or lack of standardized processes that contribute to delays? • Do we have appropriate criteria to ensure that patients truly require surgery or tests? • Can we ensure at least some excess capacity for services associated with surgery (such as space in the intensive care unit)? • Have we considered centralized booking systems that could connect patients to places with the shortest wait time? • Do we monitor key process metrics (e.g., on-time case starts and downtime) so we can maximize our efficiency and increase our capacity? • Do we measure demand and supply and do we know if they are in balance? Have we ever done queue-clearing blitzes — for example, temporarily increasing the rate of procedures done until backlog is eliminated?

1.4

Topic area	Key facts	Questions to consider
4. Safety — hospital infections and other areas (sections 4.1, 4.2 and 4.3)	Hospital-acquired infections have improved but there is major room for improvement. • Infection rates for *C. difficile* remained stable in the last year after gains in the previous year. • Ontario hospitals decreased the number of cases of ventilator-associated pneumonia and central line infection from January 2009 to September 2010, but have not yet reached the desired level of zero. • Two in three Ontario healthcare providers wash their hands before seeing patients, while almost eight in 10 wash their hands after patient contact. There have been improvements, but these rates are still too low. • Last year, almost seven in 10 reportable hospitals experienced a decrease in their hospital standardized mortality ratio (HSMR) score, which is encouraging.	• How well are we following standard protocols for preventing ventilator-associated pneumonia and central line infections? Is anyone deviating from the protocol, and why? • What are we doing to ensure that all staff and physicians use proper hand washing techniques? Are we auditing hand hygiene frequently (more than just once a year) and providing feedback to staff on compliance (e.g., monthly or quarterly, by ward or by provider group)? Are hand washing stations conveniently located, never empty, and being used? Are we encouraging patients to ask providers if they've washed their hands? • Are we regularly using checklists, standardized order sets or protocols to minimize reliance on memory? If so, are we actually tracking how we're using them and if they are having an effect? • Are we encouraging patients to ask questions about safety? • Are we promoting a culture of safety, where people feel free to speak up if they see a safety issue? • Do we have physician champions for safety? • Are we considering the use of rapid response teams, with clear guidelines for when they are to be used?
5. Effectiveness/ evidence-based practices (section 3.1)	• Although there has been some increase in the percentage of patients filling prescriptions upon discharge for heart attack and congestive heart failure, there is still room to improve. Hospitals who do not do this well tend to have higher readmission rates. • Although there have been gains over the past six years, only one in eight patients who has a stroke and could benefit from clot-busting drugs receives those drugs within one hour of arriving in the emergency department.	• Do we have information technology systems in place to remind doctors of standard protocols and treatment plans or to track compliance with guidelines? • Are we using checklists or standardized order sets to make sure people with different conditions (e.g. heart attack, heart failure, stroke) get the right drugs and tests? • Are we educating patients on the importance of these medications and how to take them? • Do we have a standardized process for handling time-sensitive situations like a new stroke? If so, how well are we following it?
6. Readmissions (section 3.3)	• About one in five patients with congestive heart failure or COPD are readmitted within a month, for any cause. There is huge room to improve these rates. • Readmissions over the past seven years have decreased by almost half for heart attack, which is good news.	• Do we know why our patients are being readmitted? • To reduce readmission, are we making sure patients have all the information they need when they are sent home (see below)? • Do patients at high risk for readmission have a follow-up home care visit immediately after discharge and an appointment with their doctor soon after discharge (e.g. a week)? • How quickly are we transferring discharge summaries to family physicians?
7. Discharge hand-offs (section 8.1) and communication (section 5.1)	Many patients leave hospital without the information they need, which can lead to readmissions. For example: • Only half of hospital patients know when to resume normal activities • Only half of ED patients know what danger signs to look out for at home • About one in three patients do not know what side effects of medications to look for There are general problems with communication: • About one in three patients felt that staff did not provide explanations to questions that were understandable	• Are written discharge instructions routine for all of our patients (including warning signs, whom to call, etc.)? • Do we use methods like "teach-back" to verify patients understand all the information they have been given? • What are we doing to simplify communication to people with low literacy? Do we have translators for people who speak different languages?

Topic area	Key facts	Questions to consider
8. Patient experience (section 5.1)	Pain control and responsiveness can be improved. • About one in two patients felt staff did not do everything they could to control pain • About one in three expressed concern about timeliness of requests for help (e.g. assistance to go to the bathroom, response to a call button).	• Are we following standard procedures and best practices for pain control (e.g. monitoring pain like a vital sign; using visual analogue scales; standard pain protocols; patient-controlled anesthesia in certain settings)?
9. Hospital finances (section 6.1)	• 27% of hospitals reported a deficit in FY 2009/10. Among large community hospitals, 36% reported a deficit. • Some hospitals (especially large community and teaching hospitals) continue to struggle to manage their current ability to pay bills without having to borrow.	• While the first instinct when facing a deficit is to cut services, has hospital management carefully thought of all the different sources of waste in the system and made aggressive plans to eliminate them (e.g., unnecessary tests or services and waste of staffing, space, inventory and supplies)?

1.5 Primary care summary

PRIMARY CARE: summary for primary care practitioners

Topic area	Key facts	Questions to consider
1. Access to primary care (see section 2.2)	There has been important progress in ensuring Ontarians have a regular doctor, but wait times to get an appointment are too long. • About one in 16 Ontarians are without a regular doctor, and almost half of those individuals are seeking one. Over the past three years, the percentage of adults without a family doctor has dropped from 8.2% to 6.5%. • Based on survey data, Ontarians are more likely than people in Quebec and Western Canada to have a regular primary care provider, and as likely as those in Atlantic Canada to have one. Internationally, Ontario is on par with other countries that had the best results among 11 countries surveyed. • Among Ontarians who are sick, fewer than 50% are able to see their doctor on the same or next day after contacting their doctor's office. This indicator has not improved in recent years, and Ontario and Canada are behind other countries.	• Are we using advanced access, the system of scheduling appointments and managing patient flow to reduce or eliminate wait times for appointments? • Could we reduce unnecessary repeat visits to free up more time to serve people better (e.g., by giving lab results over the phone instead of requiring a visit)? • Are our processes as efficient as they could be? For example, is each exam room set up exactly the same way? Can things be relocated to reduce walking around? • Do we have a well-functioning electronic medical record (EMR) system? • Are we working in a team? If yes, are we using each team member to his/her fullest capacity? Are each team member's roles and responsibilities clear? What tasks could be shifted from one team member to another?
2. Access to surgery, CT/MRI scans and specialist care (see section 2.3)	• Wait times have decreased for many surgeries like hip and knee replacements and cataracts, and for CT scans. There is still room to improve, especially for high-priority cases for all surgeries (particularly cancer) and MRI. • Half the people who are referred to a specialist wait four weeks or longer for an appointment. Canada's and Ontario's standings are the worst among 10 major developed countries.	• For CT/MRI scans, are all the tests we are ordering necessary? Do we find ourselves pressured into ordering tests that are not needed? What could we do about that? • Do we use the Ontario Wait Times website to find places that can do a surgery sooner if the patient wants this? • Have we done all we can to encourage patients to adopt good health behaviours to avoid surgery (e.g. lose weight to avoid knee replacement)?
3. Wait times from the community to long-term care (LTC) (see section 2.4)	• The median wait time for people placed into a LTC home from the community is well over 5 months, which is too long.	• Have we explored alternatives to LTC placement with patients and families (e.g., assisted living or supportive housing)?
4. Chronic disease Management (see section 3.2 and 3.3 on avoidable hospitalizations)	There are signs of improvement in chronic disease management — complications rates of diabetes are decreasing and heart attack mortality is dropping. However, there is still room to do better: • Only about half of people with diabetes received an eye exam in the past 12 months. • The use of ACEIs/ARBs and statins is increasing among elderly people with diabetes but there is still room to improve, since only half of people are getting both of these drugs. • Heavy drinking and obesity have been on the rise over the past nine years among people with chronic diseases. Rates of physical inactivity, smoking and inadequate fruit and vegetable consumption have seen minor improvements in this timeframe but are still too high. • Over one-third of patients admitted to hospital for congestive heart failure die within the next year. There has been no improvement in the last six years. • In FY 2009/10, roughly 34,100 people were admitted to hospitals in Ontario for complications from chronic diseases that could have been prevented with good primary care. COPD and congestive heart failure are the two most common conditions associated with these hospital admissions.	• Are we using methods such as flow sheets to remind us of all the best practices? • If we have an EMR, does it provide us with data on the percentage of our patients with diabetes who are on the right drugs (e.g., a statin, ACEI/ARB and acetylsalicylic acid) and who have received a recent A1C test or eye exam? • Have we set the EMR up so it reminds us when patients need tests or follow-up? • Do all of our patients know what their targets are for good disease control (e.g., blood pressure < 130/80 for diabetes or A1C < 7)? • Have patients identified their own goals for improving their health (e.g., personal targets for weight reduction)? Have they all been connected with a chronic disease self-management program? • Do we know the community supports available for our patients to help them sustain healthy living? • Do we refer the most complex patients to specialized clinics for care of conditions such as diabetes, COPD and congestive heart failure?

Topic area	Key facts	Questions to consider
5. Efficiency	Only one in six elderly patients with uncomplicated hypertension receive treatment with diuretics such as thiazides. The rest are taking medications that are more expensive and no more effective.	• Do we have protocols or decision tools to guide the choice of medications to use? Do they take into account best quality at lowest cost? • Are we allowing drug companies to influence our prescribing decisions?
6. EMR adoption (see section 7.2)	Good progress is being made in introducing electronic medical records (EMRs) to primary care. It's important, however, that EMRs are fully used as a tool to manage quality, rather than just a place to store information. • As of September 2010, more than 4,300 physicians have enrolled in provincial EMR adoption programs that support physicians to use EMRs. The target is to have 9,000 primary care and specialist physicians enrolled by March 2012. • Only 3.4% of adults in Ontario have e-mailed their family doctor with a medical question. Both Ontario and Canada lag behind a number of other countries.	• If we are considering buying an EMR system, are we getting answers from potential vendors on these questions: - Can it give me a list of all patients with certain chronic diseases? - Can it track key indicators, such as percentage of diabetes patients with A1C under control? - Will it send reminders when patients need follow-up or tests? - Can it connect to pharmacies, labs, hospitals and other providers? • Do we have a plan to minimize disruptions to workflow and productivity when implementing an EMR system?
7. Health human resources (see section 7.4)	• From 2005 to 2009, there has been an increase in the supply of family doctors (3.4%) and specialists (6.4%) per 100,000 people. Large regional variations are present across the province in the supply of healthcare providers. • There has been an 83% increase in the supply of nurse practitioners, but there is still only one nurse practitioner for every eight family physicians in Ontario.	• Are we using a team approach in our practice? If not, what are the reasons for not using one? • Could our current practice be more efficient and/or effective (e.g., do we have good communication and are we using everyone's role to its full potential)? • What are the roles and responsibilities of the various health professionals? How can using other professionals reduce the workload in our practice?
8. Population-based health (see chapter 9)	Smoking has seen a major decrease, but there has been little change in other health behaviours. There is still major room to improve population screening for preventable diseases. • Smoking rates have decreased by 25% over the past eight years. However, one in five Ontarians aged 12 and over still smoke, and rates are highest among those with low income and education and in rural areas. Also, about one in eight pregnant women still smoke. • 18% of Ontarians are obese, half the population does not get enough physical activity, and more than half do not eat enough fruits and vegetables. • More than one in four seniors did not receive a flu shot. About one-third of women aged 50 to 69 did not have a mammogram in the past two years. Nearly one in four adult women did not have a pap test in the last three years. About one in five elderly women did not get screened for osteoporosis. • Only about one in three people aged 50 to 74 were screened for colorectal cancer with a fecal occult blood test in 2009, but this indicator is improving quickly.	• Do we ask our patients about their smoking cessation at each visit? Do we have a list of all smoking cessation supports in our community for our patients? Have we considered ways to improve access to smoking cessation programs and make it easier for people to use nicotine replacement therapies? • Do we have outreach programs for people in high-risk groups? Have we made sure they know how to access them? • Do we use flow sheets to remind us of all the health prevention interventions that need to be done during periodic health exams? • If we have an EMR, does it generate reminders when people are due for their next health prevention service? • Are we offering patients screening procedures performed by either a male or female provider, depending on patient preference, as well as culturally sensitive screening programs? • Can we provide access to vaccinations outside primary care offices?

1.6 Home care summary

HOME CARE: summary for home and community care leaders, staff and clients

Topic area	Key facts	Questions to consider
1. LTC wait times/ALC (see section 2.4 and 6.2)	• Despite a major increase in the number of LTC beds several years ago, wait times to get into an LTC home are still too high. The median wait time is 3.5 months (103 days), which is nearly three times higher than in the spring of 2005. For those waiting in the community, the wait is over five months; for those waiting in hospital, it is just under two months. The latter contributes to the serious problem of ALC beds in hospitals — approximately one in six hospital beds in Ontario are filled with people who could best be cared for elsewhere. • In the past year, the number of people placed into LTC from hospital dropped by 19%, while the number placed from home rose by 15%. This could be because many communities are adopting a "Home First" approach, where hospital patients who might have been referred straight to LTC in the past are instead offered additional home care services to help them return home and allow them to make their decision about future LTC placement at home. • Over one in five people placed in LTC homes do not have high or very high care needs. These people could potentially be cared for in other settings in the community (e.g., with more home care or in supportive housing arrangements).	• Is home care involved early during the hospital stay for vulnerable clients? • What additional home care services are needed to keep people out of LTC? • What alternatives to LTC need to be considered for those who do not need the full range of LTC services? More home care services? Assisted living or supportive housing options? • Are clients and caregivers aware of all the options and services available to them? • Are decisions to apply for LTC placement being made prematurely for hospital patients, before they have had a chance to recover? • What are the characteristics of people who are the most difficult to place into a LTC home, and do more specialized services in LTC homes need to be developed for such individuals?
2. Falls (see section 4.6)	• One in four home care clients report falling in the last 90 days. There has been no major improvement in the past three years.	• Do we do routine safety assessments? Are we checking for clutter or poor lighting in the home? Are there safety bars? • Are we encouraging the use of mobility aids (e.g., walkers) and checking for proper use? • Are we conducting risk assessment for falls and identifying those clients at highest risk of falling? • Do high-risk clients receive rehabilitation to improve strength and balance? • Are any clients on a drug with side effects that might cause a fall? If so, have we discussed safer alternatives with the doctor?
3. Pressure ulcers (see section 4.6)	• Among long-stay home care clients, 1.6% have developed a new pressure ulcer (stages 2 to 4) identified over the previous six months. There has been no improvement in the past three years.	• Do vulnerable clients get risk assessments for ulcers? Are they up to date? Are staff regularly monitoring for early signs of ulcers? Are high-risk clients getting special padding to avoid ulcers on pressure points? • Are home care workers well trained in identifying clients at risk for pressure ulcers and aware of appropriate prevention and treatment strategies?
4. Injuries (see section 4.6)	• About one in 15 home care clients report unexplained injuries assessed over the past 90 days.	• Are we checking for safety hazards in the home (e.g., hot water temperature, electrical outlets and clutter)?
5. Bladder incontinence (see section 3.5)	• Half of long-stay home care clients have had a decrease in bladder function, or no improvement of a past bladder control problem since their previous assessment.	• Are there home care staff who can teach "prompted voiding" protocols or bladder strengthening exercises to clients and their informal care providers to prevent deteriorating bladder control? • Are clients advised to stop certain foods (e.g., caffeine)?

Topic area	Key facts	Questions to consider
6. Activities of daily living (see section 3.5)	• Close to half of long-stay home care clients experienced a new problem with activities of daily living or have an old problem that is not getting better.	• Are home care clients being offered physiotherapy or rehabilitation services to keep them mobile?
7. Mental health (see section 3.5)	• Among all home care clients, one in 10 exhibit a sad mood and at least two depressive symptoms. There has been no improvement in the last three years.	• Is home care making arrangements for social activities or coordinating treatment of depression with the family doctor?
8. Pain control (see section 3.5)	• Almost one-quarter of home care clients experiencing pain are not having their pain appropriately managed. This indicator has not improved in the last three years.	• Are home care clients getting frequent assessments of pain? • Are home care workers communicating information about pain to the doctor so treatment plans can be adjusted?
9. Readmissions (see section 3.3)	• About one in five patients with congestive heart failure or COPD are readmitted within a month, for any cause. There is huge room to improve these rates. • Readmissions over the past seven years have decreased by almost half for heart attack, which is good news.	• Are we making sure clients at high risk for readmission are seen at home right after discharge? • Are we making sure clients leave hospital on the right medications and know what warning signs to look out for and who to call for help? • Are we screening and monitoring high-risk clients who are at risk of readmission? • Are clients getting the right monitoring at home (e.g., daily weight checks for congestive heart failure)? • Do we have a process to ensure medication reviews are done routinely (e.g., MedsCheck)? • Do we have standard discharge follow-up protocols? • Are we promoting client self-management?

1.7 Long-term care summary

LONG-TERM CARE: summary for LTC leaders, staff, residents and family members

Topic area	Key facts	Questions to consider
1. LTC wait times (see section 2.4)	• Despite a major increase in the number of LTC beds several years ago, wait times to get into an LTC home are still too high. The median wait time is 3.5 months (103 days), which is nearly three times higher than in the spring of 2005. For those waiting in the community, the wait is over five months; for those waiting in hospital, it is just under two months. This contributes to the problem of ALC beds in hospitals. • Only four in 10 people waiting for LTC placement get their first choice when placed for the first time. • Over one in five people placed in LTC homes do not have high or very high care needs. These people could potentially be cared for in other settings in the community (e.g., with more home care or in supportive housing arrangements).	• What alternatives to LTC need to be considered or developed for those who do not need the full range of LTC services? More home care services? Assisted living or supportive housing options? • Are there bottlenecks that delay the admission of residents to a home? How can the admission intake process be redesigned to make it more efficient? • Are there certain LTC homes with long waiting lists that are frequent first choices because they serve a particular cultural, ethnic or linguistic group, or because they specialize in handling particular types of illnesses? If so, can we redeploy LTC resources in our region to better serve these groups?
2. Falls (see section 4.5)	Falls are common and have changed little in recent years: • One in seven LTC residents have fallen in the past month. • There has been no major change in the rate of emergency department visits or hospitalizations as a result of falls. There are about 3 hospitalizations for falls per 100 residents each year.	• Are we evaluating the cause of each fall? Are we doing risk assessments for falls consistently? Are they up to date? • Are we checking for clutter, poor lighting or other hazards? Are we avoiding physical restraints, which can cause falls? • Are we offering and encouraging the use of assistive devices (e.g., walkers), hip protectors for those at high risk and exercise programs to maintain strength and balance? • Are we avoiding drugs that make residents dizzy or confused (see 6 below)? If a resident is on such drugs, have we considered safer alternatives? • Are residents getting prompt help when they want to go to the washroom?
3. Pressure ulcers (see section 4.5)	• One in 36 residents develop a new, serious pressure ulcer over a period of three months; that's about one in nine residents each year. Ontario can strive to achieve a value closer to zero.	• Are we doing risk scoring for ulcers consistently for all residents? • Do we provide training for all staff in protocols for prevention (e.g., early detection, turning immobile residents regularly and proper techniques to avoid tearing the skin when moving a resident)? • Do we have proper padding or special mattresses for high-risk residents? • Do we have standard protocols agreed to by all doctors for treating pressure ulcers?
4. Bladder incontinence (see section 3.4)	• 21% of residents find that their bladder control has gotten worse over the past three months.	• Are residents getting help with either exercises to strengthen bladder muscles or learning "prompted voiding" protocols that can help avoid incontinence? • Are residents getting prompt help when they want to go to the washroom? • Do residents know that some food items (e.g., drinks with caffeine) can worsen incontinence?
5. Avoidable emergency department visits (see section 6.3)	• Potentially avoidable emergency department visits are common among LTC residents. There has been no major change in the past seven years in this area. • Over the past seven years, there has been continuous improvement in the rate of low acuity emergency department visits by LTC residents. This is good news, but there is still be room to improve.	• What training or support do staff need to increase their skills in handling minor emergencies without needing to transfer to the emergency department? • Have we considered using nurse practitioners, telemedicine or better organized call schedules for physicians to improve the availability of people to assess minor emergencies within the home? • Are family members aware of the potential risks of emergency department visits (e.g., confusion and hospital-acquired infections)?

Topic area	Key facts	Questions to consider
6. Drug safety (see section 4.4)	• The use of drugs that should be avoided in the elderly is gradually decreasing. However, about one in five LTC residents is still prescribed these drugs. • Shortly after entering an LTC home, one in six residents are given an antipsychotic drug that they were not receiving before (i.e., the LTC home physician — not the previous family doctor — started the drug). One in four are given a new drug for anxiety or sleep. There has been no major change in the past three years. These drugs have many risks should be avoided where possible.	• Why are people started on sleeping pills once they enter an LTC home? What non-drug options are being tried to reduce insomnia (e.g., avoiding caffeine, reducing noise, adopting a regular sleep routine, avoiding long naps and managing underlying depression)? • Are physicians and staff familiar with drugs to avoid in the elderly? Should some drugs be removed from the formulary? • Does a pharmacist do regular, detailed reviews of medications, with the involvement of family and staff? • Have we tried non-drug approaches for behavioural issues such as aggression (see 8 below)? • Do we have an EHR to better track medication and prevent adverse drug events?
7. Restraint use (see section 4.5)	• Almost one in six LTC residents were physically restrained in the previous three months. Many LTC homes are adopting zero-restraint policies, and some countries have rates lower than Ontario's.	• Are we educating staff and family members who ask for restraints about their hazards (e.g., falls, pressure ulcers and asphyxiation)? • For people who wander, have we considered alternatives to restraints, such as bed and door alarms?
8. Behavioural issues (see section 4.5)	• 14% of LTC residents were noted to have worsening behaviour (e.g., aggression or wandering) in the past three months.	• Are staff trained in communication and conflict de-escalation techniques to avoid making residents frustrated (e.g., good eye contact and one-sentence questions)? • Can we communicate in the various languages of our residents? • Have staff considered if this behaviour is due to an existing or new health problem, discomfort or fear? When causes of disruptive behaviour are identified, are solutions incorporated into care plans?

1.8 Cardiovascular disease summary

Overall, there has been great improvement in the management of cardiovascular disease, but there are still areas where Ontario can do better — particularly with congestive heart failure.

1. **Wait times for cardiovascular surgeries are within target for most patients, but there is still room to improve.** For coronary artery bypass, angiography and percutaneous coronary intervention, the vast majority of patients have their procedure within the target time. There is room to improve for semi-urgent angiographies (70% completed within the target time) and semi-urgent percutaneous coronary interventions (79% completed within the target time).
2. **More patients are on the right medications after a heart attack but, again, there is room to improve.** Use of statins, beta-blockers and ACEIs/ARBs are at 87%, 79% and 79%, respectively, but experts suggest these rates should be closer to 90%.
3. **Heart attack incidence, mortality and readmissions are declining.** Over the last seven years, there has been a 66% reduction in hospitalizations for angina, with a 13% decrease in the last year.
4. **Congestive heart failure is still associated with high mortality and readmissions rates.** Over one-third of patients admitted with congestive heart failure for the first time die within the following year, and this indicator has not improved over the last six years. About 22% congestive heart failure patients are readmitted within 30 days, and this has not improved recently.
5. **Mortality has improved for stroke but there are opportunities to do better.** Stroke mortality rates are declining and almost all patients are on acetylsalicylic acid or other anti-thrombotic drugs, as guidelines suggest. However, only 13% of stroke patients arriving in an emergency department get within one hour a clot-busting drug that can reduce disability from stroke. Also, only 29% of stroke patients get in-hospital rehabilitation to help them regain their function, while experts suggest this figure should be closer to 40%.
6. **There have been great reductions in smoking, but progress on other unhealthy behaviours related to heart disease has stalled.** Smoking rates have decreased from 25% in 2001 to 19% in 2009. However, currently 18% of Ontarians are obese and half are physically inactive, and these rates have changed little.
7. **Those with low incomes and poor education continue to be at greatest risk for unhealthy behaviours.** The poorest Ontarians are 36% more likely to experience a heart attack than the richest Ontarians. Ontarians with low incomes or poor education are twice as likely to smoke as people with higher incomes or a better education.

Questions for healthcare leaders and staff to consider:

- How well are recommended practices being followed? Are primary care providers using tools like flowsheets for heart failure or coronary artery disease to monitor if the right drugs and tests are being done? Can electronic medical records flag which patients are due for follow-up or require closer surveillance because they have problems managing their condition well?
- Are hospitals using tools like standardized orders at admission or checklists at discharge to ensure patients are getting all the recommended drugs and tests? Are individual providers getting feedback on how well they are following recommended practices?
- Are patients engaged in their care? Have we verified they understand the information given to them? Are they encouraged to make their own decisions regarding their care? Are they regularly monitoring key measures, like blood pressure or weight (for heart failure)? Do they have an action plan that tells them what to do or who to call if they get worse?
- Can we target interventions for reducing unhealthy behaviours towards those with the most to gain?

Key questions for patients with heart disease to ask themselves or discuss with their healthcare provider:

- Am I on all the right medications? Ask about acetylsalicylic acid (Aspirin), a cholesterol-lowering drug (e.g., a statin), an ACEI/ARB and a beta-blocker for past heart attacks, blocked arteries and congestive heart failure.
- Am I getting all the right monitoring? This includes blood pressure checks, periodic cholesterol tests and, for congestive heart failure patients, an echocardiogram and daily weight monitoring.
- Do I know the early signs of a stroke (such as weakness, numbness, inability speak or write, double vision) so I know when to go to the hospital immediately?
- Do I know my targets for blood pressure and cholesterol? Typical blood pressure targets are 140/90, or 130/80 for those who also have diabetes; the target for LDL ("bad cholesterol") is two or less.
- What am I doing to eliminate smoking, improve my physical activity and achieve or maintain my ideal weight? What personal goals would I like to set for myself? What help do I need — e.g., nutrition counselling, exercise groups, smoking cessation aids and support from friends or family?

1.9 Diabetes summary

HOSPITAL
LONG-TERM CARE
HOME CARE
PRIMARY CARE

Overall, there are cautious signs of improvement in managing diabetes, but there is still a lot of room to do better — particularly in monitoring and screening patients' conditions and risk factors and filling prescriptions. If Ontario is to see further progress, it will also be important for patients to be engaged in managing their own care and setting their own targets and plans for improving their lifestyle choices.

1. **The incidence of serious complications and hospitalizations from diabetes has decreased in the last five years, but there is still room for improvement.** Slightly more than one in 25 diabetes patients will experience a major complication (death, heart attack, stroke, amputation or kidney failure) in a year.
2. **More patients are on the right medications for diabetes, but Ontario is still far from ideal.** Only 60% regularly fill their prescriptions for a cholesterol-lowering drug (e.g., a statin), 67% for an ACEI/ARB, and 48% for both. Experts suggest that most elderly diabetes patients should be on these drugs.
3. **Monitoring diabetes conditions is poor.** Although all diabetes patients should get regular eye exams, only about half do.
4. **Smoking has decreased sharply in the past decade, but progress on other unhealthy behaviours that lead to or worsen diabetes has stalled.** Currently 19% of Ontarians smoke, 18% are obese and half are physically inactive.
5. **Those with low education or income level are at greatest risk of unhealthy behaviours that lead to or worsen diabetes.** Smoking and physical inactivity is worse among those with low income or education. Obesity is worse among those with low education.

Key questions for healthcare leaders and staff to consider:

- Are we using methods such as diabetes flow sheets to remind us of all the best practices?
- If we have an EMR, does it provide us with data on the percentage of our diabetes patients who are on the right drugs (e.g., a statin and ACEI/ARB) or who have had a recent A1C test or eye exam? Have we set up the EMR so that it reminds us when diabetes patients need testing or follow-up?
- Have our patients identified goals for improving their health? Have they been connected with a chronic disease self-management program?
- Do we use a monofilament in the office to do proper diabetes foot exams?
- What are we doing to reach out to the most vulnerable populations to ensure they are getting services targeted to their education level, culture or language?

Key questions for patients with diabetes to ask themselves or discuss with their healthcare provider:

- Am I on all the right medications? Ask about a statin, ACEI/ARB and acetylsalicylic acid (aspirin), in addition to medications to control blood sugar.
- Am I getting all the right monitoring? This includes eye checks, foot exams and urine tests, as well as regular blood tests for cholesterol and A1C (a three-month average of blood sugar).
- Am I doing my own monitoring of blood sugar and blood pressure? Do I keep a log of my measurements at home?
- Have I set targets for blood sugar, blood pressure (ideally 130/80) and weight with my doctor?
- Am I eating properly and staying physically active? What personal goals do I want to set for improving my health? What support do I need to achieve my goals — e.g., nutrition counselling, exercise groups, smoking cessation aids and support from friends or family?

1.10 Cancer summary

There has been a steady decline in death rates from some major cancers in Ontario, likely due to better treatments and decreased smoking. However, wait times for urgent cancer surgery and systemic treatments (chemotherapy) need to be shortened, and more progress is needed in reducing unhealthy behaviours and improving cancer screening.

1. **Rates of lung cancer and mortality from breast cancer have improved over the last 10 years.** This is good news and may be due to reduced smoking in previous decades and better treatments over time.
2. **Wait times for cancer care can be improved, especially for urgent cancer surgeries and systemic treatments (e.g., chemotherapy).** Only 67% of urgent (priority 2) patients have their surgery within the recommended timeframe. Some hospitals, including North York General Hospital, have achieved 100% through well-designed and efficient scheduling processes. Other hospitals could do the same. Wait times for radiation therapy have improved, with nearly four in five patients treated within the target timeframe, but there is still room to do better. Nearly two-thirds of patients needing systemic treatments are seen by a specialist within the 14-day target. After being seen by the specialist, only about half of the patients get treatment within the target timeframe.
3. **Screening rates for breast and cervical cancer can still improve.** Approximately one-third of the women who need a mammogram, and one-quarter of women who need a Pap test still do not get them. Screening rates for colon cancer are increasing but, at 35%, are still too low.
4. **Smoking has improved significantly, but progress in reducing other unhealthy behaviours, such as inadequate consumption of fruits and vegetables, obesity, physical inactivity and heavy drinking, has stalled recently.** At present, the rates of these behaviours in the population are 19%, 56%, 18%, 49% and 22%, respectively. These unhealthy behaviours have been linked to breast, colon, lung, liver, kidney and other cancers.
5. **People with low incomes and poor education levels continue to be at greatest risk for unhealthy behaviours and for not receiving preventive screening.** For example, smoking rates are 35% for those without a high school diploma and 15% for those with post-secondary education. Rates for mammography screening are 59% among low-income women, compared to 71% for those with higher incomes. Future plans to battle cancer need to consider strategies that target the most vulnerable in the population.

Key questions for healthcare leaders and staff to consider:

- What targets are we setting for wait times? If some places have achieved major improvements (e.g., North York General Hospital), why can we not do the same thing?
- Have we mapped out the processes involved in arranging cancer surgery, radiation or chemotherapy? Where are the areas of waste, duplication, error or missed hand-offs? What are we doing to make our processes more timely and reliable?
- Do we have information systems to ensure that everyone due for cancer screening is reminded?
- What are we doing to reach out to the most vulnerable populations?

Key questions for people to ask themselves or discuss with their healthcare provider:

- Which screening tests do I need for my age and gender and how often? When am I due for each of these?
- What am I doing to eliminate smoking, become more physically active and achieve or maintain my ideal weight? What personal goals would I like to set for myself? What help do I need — e.g., nutrition counselling, exercise groups, smoking cessation aids and support from friends or family?

1.11 Mental health summary

HOSPITAL
LONG-TERM CARE
HOME CARE
PRIMARY CARE

Suicide, depression and poor handoffs of care remain important areas of concern in mental health. The description of mental health for Ontarians, however, is seriously limited because there are huge gaps in the health care system's ability to measure the quality of services provided.

1. **The rate of intentional self-harm presenting in emergency departments has dropped in recent years, but suicide rates remain constant. There is still room for improvement.** At present, there are 88 emergency department visits for intentional self-harm per 100,000 people. Women and in those in lower income brackets are at greatest risk. In 2007, 1,000 people in Ontario committed suicide. There has been no change in the past seven years. The tracking of suicide is poor, and there is concern that suicides may be underreported.
2. **Many people with mental health problems do not get primary care follow-up after they are discharged from hospital.** Almost four in 10 patients discharged from hospital after treatment for a mental illness do not have a primary care physician visit within 30 days, and this has not improved in the last three years.
3. **Depression is a significant problem among frail or elderly individuals.** Among people receiving home care, 9.2% show serious signs of depression, such as profound sadness or withdrawal from normal activities. Currently, 26% of those living in LTC showed increasing symptoms of depression or anxiety in the preceding three months.
4. **Inappropriate behaviour, such as aggression, agitation or wandering, is common among LTC residents.** Since their last assessment (three months ago), 14% of residents exhibited worsening behaviour. These behaviours are particularly common among those with Alzheimer's or other dementias.
5. **Many people entering a LTC home for the first time are placed on an anti-psychotic or anti-anxiety drug that they weren't on before.** One in six residents are given a new antipsychotic drug, and one in four are given a new drug for anxiety (often used as sleeping pills). These drugs have many risks should be avoided where possible.

Key questions for healthcare leaders and staff to consider:

- Do we screen for warning signs of depression?
- Are we overprescribing antipsychotic and anti-anxiety drugs? Are we using non-drug methods to deal with agitation, insomnia or anxiety? Are we offering people in home care or LTC social activities or counselling? To avoid frustration among LTC residents, are we using strategies such as one-sentence communication, maintaining good eye contact and conflict de-escalation techniques?
- Are we ensuring regular medication reviews by a pharmacist, with input from the client/resident, the family and staff?
- If we have an EMR, does it monitor drug utilization patterns?
- What are we doing to reach out to the most vulnerable populations to ensure they are getting the counselling they need to reduce the incidence of self-harm? Are we making sure the services we provide take into account people's culture, financial and family situation?

Key questions for family members of patients experiencing symptoms of mental illness to ask themselves or discuss with their healthcare provider:

- Is my family member showing signs of depression? What is being done to treat these symptoms? If my family member is in LTC, is there anything in the surroundings that could be contributing? What could be done to improve participation in activities or social networks?
- For people who have just been discharged from hospital for a mental health problem, has follow-up been arranged with a family doctor and other mental health services?
- Is my family member being given antipsychotic or anti-anxiety/hypnotic drugs or sleeping pills (such as Valium or Ativan)? Have I discussed with his or her doctor if these medications are necessary and if there are alternative methods to deal with agitation, sleeplessness or anxiety?

1.12 Data advocacy

HQO has an ongoing commitment to report on the performance of Ontario's publicly funded healthcare system. To fulfill that commitment, the organization needs access to up-to-date, high-quality data on the delivery and impact of the full range of healthcare services provided to Ontarians. Ontario already has some of the best data in Canada, collected by a range of different organizations. However, there are still gaps; in some cases, the data exist but are inaccurate or impossible to access, while in other cases, there are no data at all.

HQO believes it is important to advocate for improved data. Better data means improved reporting, and improved reporting is essential to better care. This year, HQO has worked with stakeholders and experts to identify the questions about quality that we cannot answer without better data, why the questions are important, and ideas on how data can be obtained.

Topic	The questions Ontario needs to answer	Why this is important	Ideas on how to get data
Chronic disease management	- Are best practices being followed? Are patients getting the right drugs, monitoring? - Is chronic disease well controlled? Are physical measures (e.g. blood pressure, weight) in a desirable range?	Chronic diseases affect a large number of Ontarians. Billions of dollars are being spent on treatment, yet we do not know if we are doing a good job.	A Diabetes Registry is in progress which will soon fill some of these gaps. EMRs in primary care could be used to extract this data for other conditions in the future.
Appropriateness of services	- Are people receiving unnecessary tests, surgeries or other procedures?	Sustainability of the health care system depends on being able to reduce expenditures for unnecessary care while preserving dollars for when it's needed.	Collect data on at least a sample of services about whether appropriateness criteria were met. Consider developing electronic order entry systems where this data could be entered.
Mental health outcomes and access	- Do people feel any better or function in society any better after receiving mental health services? - Are people getting access to the services they need?	There are thousands of mental health service providers in Ontario, but little information about the impact of their programs.	A mental health service user experience survey could be used to measure outcomes and access.
Patient reported outcomes	- Do people function better after treatment or surgery? Has their ability to move, see, hear, function normally or live pain-free improved?	Ontario has spent billions of dollars in reducing wait times for surgeries, but we do not know whether or not people are truly better off.	Consider patient surveys after receiving a procedure. Consider adding questions to existing surveys.
Drug utilization and safety	- What drugs are people on? - How frequently is harm from avoidable adverse events from drugs occurring?	Data on drug use is needed to track if people with certain conditions are on the right drug; currently, this is available only for people aged 65 and over or on social assistance. There is very little data on drug errors (e.g. wrong dose, wrong drug, wrong site) and the level of harm caused.	Ontario could learn from Alberta and Saskatchewan*, which already have data systems to track all drugs and allergies for all persons. Ontario currently has a database where hospitals report drug errors and harm voluntarily†; this process could be expanded and made mandatory.
Hospital safety — broader measures	- What is the overall probability of being harmed during a hospital stay? - How frequently do these events occur: missed diagnoses, surgical complications, "never events" (e.g. wrong-site surgery), death from sepsis, or avoidable harm during a transfer between small and large hospitals?	Ontario has invested heavily in measuring hospital-acquired infections, but relatively little attention has been paid to measuring other serious patient safety issues in hospital.	Consider enhancing the existing process where chart abstractors code data into the Discharge Abstract Database, or using "trigger tools" where physicians and nurses review charts that are flagged as being anomalous (e.g. length of stay for a condition unusually long).

* Alberta's Pharmacy Information Network and Saskatchewan's Pharmacy Information Program offer this functionality.

† These data are reported to the Institute for Safe Medication Practices — Canada.

Topic	The questions Ontario needs to answer	Why this is important	Ideas on how to get data
Health equity	- What is the gap in outcomes or access to services between different groups in society?	Information is available on income, education, ethnicity and immigration status on national survey data, but not on other data sources. This limits the ability to monitor societal inequalities. Also, Ontario's databases currently do not identify First Nations status.	Consider adding more questions on income or ethnicity on other surveys. Consider data linkages with federal government data on "Registered Indian" status. Consider ways of adding this data to chronic disease registries as they are developed.
Cost of services	- How much does a health care service cost? Who can provide a service at the highest quality and lowest cost?	It is important to identify which models of care achieve the best outcomes at lowest cost, so that others can achieve the same. Currently, there is very little data on costs per services.	Ontario has limited experience with "case-costing" in hospitals that could either be expanded or leveraged to other sectors.
Patient experience (beyond hospitals)	- Do people who use the health care services feel the system is designed around their needs? How good is communication, courtesy, involvement in decisions, or responsiveness to concerns?	Patient-centredness is a core attribute of quality. It is measured routinely in hospitals but not in other sectors. The Excellent Care for All Act will eventually make patient surveying mandatory across the system.	Surveys are already in development for home care and long-term care. Consider patient / user experience surveys in primary care and mental health.
Accurate reporting of mortality	- What is the infant mortality rate? Suicide rate? Mortality rate for other conditions? These are currently tracked, but there are concerns about accuracy.	Experts are concerned that infant deaths are undercounted due to failure to complete forms. Suicide may be underestimated because information on cause of death may only become available after the original death certificate is complete.	Consider re-designing the process used to track deaths or determining cause of death.

2.1 Wait times in emergency departments

People want to be seen quickly and cared for promptly and efficiently when they visit an emergency department (ED). After the initial assessment, care in the ED may involve diagnostic tests, observation and/or treatment. Sicker patients need to be seen more quickly and typically have to spend longer in the ED receiving the care they require. Care in the ED ends when the patient is either admitted to hospital or sent home. However, patients who do not get seen quickly may decide to leave the ED. MOHLTC recently invested in a new information system that allows it to track care in the ED. This system is an important part of the strategy to reduce ED wait times.

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
People seen quickly and treated promptly and efficiently in EDs.	Long ED wait times are inconvenient and, in some cases, negatively affect a patient's health.[1] Spending a long time in the waiting room, or on hallway stretchers waiting for admission, can also compromise comfort and privacy.	Ontario's one in five residents who visit an ED at least once a year.[2, 3]

Indicator	Value	Time trends & comparisons	Bottom line
90th percentile wait time for ED patients: → High complexity†	12 h*		**The maximum time nine in 10 patients spend in an ED decreased in the last two years by two hours for high complexity patients (from 14 to 12 hours), and by half an hour for low complexity patients (from 4.8 to 4.3 hours). Policies, investments and quality improvement activities likely contributed to this decrease (see page 26). However, there is room to improve, as the targets for high and low complexity patients are 8 and 4 hours respectively.[4]**
→ Low complexity††	4.3 h		
Percentage of patients who left without being seen	4.7%**		**One in every 20 Ontarians who visit the ED leave without being seen by a physician, likely because they were tired of waiting.[5] This indicator has improved over the last two years, probably because wait times have decreased. There is still room to do better.**
Percentage of ED care completed within recommended time: → Overall	81%***		**Over the past two years, the percentage of people who were treated in the ED within the recommended time frame has increased modestly from 78% to 81%. While this improvement is encouraging, more than half of those patients who are admitted to hospital are still spending more time in the ED than is desirable. There is room for improvement.**
— Admitted patients†	41%§		
— Non-admitted high complexity patients††	90%§		
— Non-admitted low complexity patients††	85%§		

Data sources:
* National Ambulatory Care Reporting System Database (NACRS), September 2010, provided by MOHLTC.
** NACRS, January to March 2010, provided by MOHLTC.
*** Emergency Department Reporting System (EDRS), April to June 2010, provided by Cancer Care Ontario (CCO).
§ EDRS, FY 2009/10, provided by CCO.
† Includes patients classified as triage level 1 (resuscitation), 2 (emergent), or 3 (urgent).
†† Includes patients classified as 4 (semi-urgent) or 5 (not urgent).
‡ Target eight hours.
‡‡ Target four hours.

Indicator	Value	Time trends & comparisons	Bottom line
Median time to physician assessment	1.2 h**		**People are waiting too long to see a doctor in the ED, according to national guidelines[6]. The median time from when a patient is registered in the ED to when they see a doctor is 1.2 hours, and this has not changed over the past two years. The current wait time is 18 minutes worse than what it was in 2004 (see last year's report[7]). There is obvious room for improvement.**
Median time from admission to transfer to bed	3.4 h**		**Half of patients waited more than three hours for a bed after being admitted to hospital from the ED. There has been no improvement in the past two years. This is consistent with the above finding that it is the admitted patients who are least likely to get their ED care within the recommended time. Future efforts need to focus on this group.**
Percentage of Ontarians who visited the ED and waited two hours or more for treatment after arrival	50%[8]		**Half of Ontarians who visited the ED said they waited two hours or more for treatment after arrival.[†††] Compared to 10 other countries surveyed, Canada and Ontario are doing poorly. Thus, although the recent reductions in time spent in the ED described above are welcome, Ontario is still far from where it needs to be.**

Data sources:
** NACRS, January to March 2010, provided by MOHLTC.
[8] Commonwealth Fund International Survey of Adults, 2010.
††† This indicator measures 'treatment', which typically occurs after the physician assessment which has a mean wait time of 1.2 hours.

2.1

Root Cause

Inefficient processes for discharging patients. Patients are occupying beds in the ED when they should have been discharged (e.g., to home, home care, long-term care).[8]

Backlogs elsewhere in the hospital prevent patients admitted in the ED from being sent to a bed on the ward in a timely manner.[9,10] One study found a 10% increase in hospital occupancy was associated with an 18-minute increase in ED length of stay.[11]

Inefficiencies within the ED, such as staffing shift change hand-offs, accessing equipment and supplies, or delays in the admission process, which can slow processes.

Ideas for Improvement

Develop better care coordination and move patients to the right place as soon as possible so they are not occupying beds unnecessarily.

- **Provide alternatives** for alternative level of care (ALC) patients (see section 6.2).
- **Start discharge planning** early and request home care assessments at appropriate times to avoid delays.
- **Use bed tracking systems** to reduce the time between when a patient leaves a bed and when a new patient can use it.[12]
- **Smooth the inflow and outflow of admitted patients.** For example, Monday admissions tend to stay longer, as do people discharged on Mondays. When admissions outnumber discharges in one day, ED waits are longer the following day.[13] Better discharge planning and more even access to certain services throughout the week could smooth out flow.
- **Spread elective surgery cases more evenly throughout the week.**[14] This allows for more flexibility to accept surgical cases from the ED as they arise.

Make specific process improvements within the ED,[15,16] such as:

- Create a **fast-track area** for less serious cases.
- Create **special units for patients who need to be under observation** for several hours.
- **Make simple changes in location of supplies and equipment in the ED, and use consistent locations for common supplies** to minimize wasted staff time walking back and forth.
- **Use process management software** to analyze data and processes to reduce non-productive work and improve use of resources.[17]
- **Use flexible staff scheduling.** Work with staff to create arrangements where staff can be brought in for a sudden surge in visits or stay at home when it's quiet.[18]

Many hospitals have already begun adopting these ideas; future progress may depend on ensuring these ideas are used more consistently in the province.

Root Cause

Avoidable demand from non-urgent cases,[19] which could be addressed in settings other than the ED.

See section 6.3 for more on avoidable emergency department visits.

Avoidable demand due to poorly controlled conditions that could have been addressed in primary care before they escalated to emergency care.

Ideas for Improvement

Divert non-urgent cases away from the ED to other alternatives:[20]

- **Improve access to after-hours primary care**.[21, 22]
- Encourage people to **call Telehealth Ontario** for advice on whether an ED visit is needed.
- **Implement targeted programs** for specific health conditions that do not necessarily require hospital admission.
- **Create "urgent care" clinics** that have instant access to imaging and labs, where lower acuity patients can be seen. For example, Alberta implemented five urgent care centres that reduced ED use by 22% to 25% during their hours of operation.[23]
- **Divert patients to the most appropriate service for their condition**. For example, North York General Hospital developed a successful program that diverts mental health patients from the ED to more appropriate, community-based care services. More than half of patients who were referred to the Emergency Department Diversion Program may have been admitted to an in-patient bed if the program's services had not been available.[24]

Improve primary care services. Improve access to primary care (see section 2.2), including after-hours primary care and management of chronic diseases (see section 3.2), so patients are less likely to require emergency care.

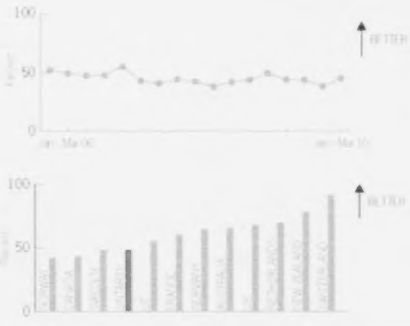
What is Ontario doing?

- In 2008, Ontario announced $109 million in funding to reduce ED waits, by adding more home care support; dedicated nurses to care for patients who arrive at EDs by ambulance to ease ambulance offload delays; and nurse-led outreach teams to provide care in long-term care homes and avoid transfers to ED.[25,26] Other announcements have committed to adding 27 physician assistants in EDs[27] and 90 ED nursing positions.[28]
- The ED Pay-For-Results Program provides incentives to hospitals with high ED volumes and long wait times to reduce length of stay. It has helped participating hospitals lower overall wait times by 4.7 hours (28%) for patients requiring complex medical care or hospital admission, and by 1.4 hours (22%) for patients with minor conditions. A further $100 million investment will expand the program to 25 more hospitals, for a total of 71.[29]
- The ED Process Improvement Program (ED-PIP) has provided 64 hospitals with on-site coaching support, quality improvement training and other resources on how to lower wait times and improve patient experience. The program will support 90 hospitals by FY 2011/12.[30]

2.2 Access to primary care

All Ontarians should have a regular primary care provider — preferably one who works in a team of different professionals. The primary care provider knows the person's medical history, diagnoses and treats new problems, monitors chronic conditions, offers preventive health services and coordinates referrals to specialists. It's important that individuals can get primary care appointments quickly when needed.

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
All Ontarians have a regular primary care provider — a family doctor or nurse practitioner — and no one has to wait long to see him or her.	Patients who do not get care when they need it may wait and get sicker — or they may resort to an emergency department[31] or different provider who is unfamiliar with their medical history. Both waiting and/or seeing an unfamiliar provider can negatively affect patients' health[32] and waste time and resources.	Ontario's 13 million residents.
Infants see a primary care provider for follow-up soon after birth.	Without follow-up after birth, certain illnesses could be missed and the risk of infant morbidity and mortality increases.[33]	Ontario's 136,000 babies born every year, and their families.[34]

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of adults who are: — Without a regular doctor — Without a regular doctor and actively seeking one	6.5%* 3.3%		**Over the past three years, the percentage of adults without a family doctor has dropped from 8.2% to 6.5%. About half of those persons without a family doctor are actively looking for one, and that figure has also decreased. This is a major improvement, and may be due to efforts to increase the supply of family doctors and nurse practitioners (NPs; see section 7.4); create family health teams and NP-led clinics; and programs like Health Care Connect that help people find a family doctor.[35]**
Percentage of Ontario adults who do not have a regular doctor or other primary care provider[†] to help manage their care	3.9%**		**Based on survey data, Ontarians are more likely than people in Quebec and Western Canada to have a regular primary care provider, and as likely as those in Atlantic Canada to have one. Ontario is no different from France, Switzerland, Norway and the Netherlands — four European countries with the best results among 11 countries surveyed (data not shown).**
Percentage of adults who were able to see their doctor on the same or next day the last time they were sick or needed medical attention	48%**		**Fewer than half of Ontarians could see their doctor on the same or next day when they became sick. No changes have been seen in recent years. Compared to other surveyed countries, Canada and Ontario have some of the worst rates. In the UK, where there have been intensive national campaigns to decrease these wait times,[36,37] 68% can get an appointment within the next day. In Switzerland, the figure is 91%. There is huge room for improvement.**
Percentage of newborns who had a follow-up appointment with a primary care provider within one week of birth	87%***		**In FY 2009/10, nearly nine in 10 newborns received a follow-up appointment with their primary care provider within one week of being born. There has been no change in the past four years. There may still be room to improve.**

Data sources:
* Based on the Primary Care Access Survey, a quarterly phone survey of Ontario adults (aged 16 and over). Most recent results represent average data from FY 2009/10.
** Based on Commonwealth Fund International Survey of Adults, 2010.
*** Ontario Health Insurance Plan, calculated by Institute for Clinical Evaluative Sciences, FY 2009/10.
† This indicator includes "other primary care providers" where as the previous indicator does not. Also, each indicator uses different survey instruments. Hence, the results for the two are different.

HOSPITAL
LONG-TERM CARE
HOME CARE
PRIMARY CARE

Root Cause

Inconvenient or inefficient patient scheduling. When wait times are long, office staff waste time responding to requests to change or cancel appointments and triaging patients by urgency.

Unnecessary work is done in primary care offices. Wasted staff time means less time for appointments.

Inefficient or inconsistent processes exist, such as wasting time searching for information.

There is a lack of teamwork and inefficient use of staff. Doctors may be performing tasks or procedures that could be performed by another healthcare professional. Better teamwork could increase the number of patients in a primary care practice and improve the availability of appointments.

Ideas for Improvement

Advanced access scheduling,[38,39] is a method of scheduling appointments that aims to reduce wait times to see a healthcare provider.[40] Basic principles of queue management can bring wait times for appointments close to zero:

- Carefully track incoming requests and actual slots available.
- **Match supply and demand**[41] in order to make more slots available to accommodate people who arrive with urgent problems (e.g., if Mondays are busiest, schedule more slots then and put optional meetings on slower days).
- **Work down the backlog.** If supply and demand are matched but there is still a queue, then work extra hours or hire extra help for a limited period of time to eliminate the queue.
- **Reshape the demand**[42] to help ensure supply and demand are matched. Reduce unnecessary demand, for example by eliminating unnecessary follow-up visits or handling minor issues over the phone or by email (e.g., providing lab results, or renewing certain prescriptions).
- **Establish contingency plans**, to bring the queue back to zero when there is a surge in waits (for example, after someone goes on vacation).

The Athens District Family Health Team, using these ideas, decreased the wait time for appointments from 27 days to between zero to two days.[43] For more information, see www.ohqc.ca/pdfs/access.pdf.

Use **email or online scheduling systems**[44] to schedule or cancel appointments, as telephone lines are often busy or the office may be closed.

Improve office efficiency.[45] Simple steps that save minutes or seconds of each clinic visit can add up to days or weeks of saved time over a year. These include setting up every patient room in the same manner, organizing patient records more effectively (see below), and using flow mapping to clarify and standardize complex processes to identify where time can be saved.

Have a well-functioning electronic medical record (EMR) system.[46] EMRs can save time by decreasing paperwork and making it easier to access test results or other information in real time. The EMR can also be set up to monitor statistics on wait times or office efficiency.[47]

Establish interdisciplinary primary care teams and use all team members to the fullest.[48,49] This can help increase the number of patients served; for example, after the establishment of family health teams in Peterborough, 17,000 without a family doctor gained access to primary care.[46] Ensure roles and responsibilities are clear for each team member.[50] For example, nurses can do preventive health counselling, give immunizations and coordinate patient care;[51] nurse practitioners can diagnose, treat and monitor a wide variety of conditions;[52,53] pharmacists can help manage medication use;[54] and dieticians can provide nutritional counselling and promote behaviour change.[55] Office staff can check height and weight, check blood pressure with an automatic cuff and/or ensure that data is input properly into EMRs.

Consider expanding legislated scopes of practice for capable healthcare professionals.

What is Ontario doing?

- 170 family health teams (FHTs) provide 2.5 million Ontarians (416,000 of whom didn't have a family doctor) with access to primary healthcare, with 30 more scheduled to open in August 2011.[57]
- The Quality Improvement and Innovation Partnership (QIIP) provides training to FHTs on how to implement advanced access.[58]
- 7,514 physicians cared for 9.35 million patients through primary healthcare models in October 2010, up from 2,034 in January 2004.[59]
- The MOHLTC has funded nurse practitioners in primary care settings and committed to fund up to 500 registered nurses in physician practice groups focusing on aging at home, end of life care, and mental health and addictions.[60] By the end of 2012, MOHLTC aims to have 25 nurse practitioner-led clinics operational, caring for more than 40,000 people.[61]
- Northern and rural communities have access to the Northern and Rural Recruitment and Retention Initiative, including free tuition for return of service, outreach programs, and support for visiting physicians and health centres.[62]

2.3 Treatment wait times and access to specialists

When people get sick, they may need to see a specialist, have surgery, undergo sophisticated diagnostic imaging tests and/or receive specialized therapy. Access to these important healthcare services should be organized so that those who need them most urgently receive them most quickly. The Ontario Wait Times Strategy,[62] launched in 2004 to reduce wait times for key surgeries and diagnostic tests, set targets to ensure that the highest priority patients get care as quickly as they need it. In addition, Cancer Care Ontario has set target wait times for radiation and chemotherapy.

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
No one has to wait a long time to see a specialist.	Patients worried about a disturbing symptom may experience unnecessary anxiety waiting to see a specialist for a diagnosis. They may also get sicker while waiting, leading to a more extensive surgical procedure or a more advanced stage of the disease.	Ontarians requiring a specialist referral. Six people are referred to a specialist each year for every 10 people who have a family doctor.[64]
No one has to wait longer for hip and knee replacements than the target wait time.	Patients will endure pain and suffering for a longer period of time.[65] They may also lose their ability to participate in activities and exercise,[66] which could worsen other conditions such as diabetes, hypertension and depression.	Ontario's 35,000 people who have hip or knee replacements each year.
No one has to wait longer for cataract surgery than the target wait time.	People will endure poor vision for a longer period of time and may experience more falls.[67]	Ontario's 139,000 people who have cataract surgeries each year.[68]
No one has to wait longer for cardiac procedures — angiography, percutaneous coronary intervention† or coronary artery bypass graft — than the target wait time.	Waiting too long for coronary interventions increases risk of death.[69]	Ontario's 64,364 people who have angiographies, 20,598 people who have percutaneous coronary interventions and 8,308 people who have coronary artery bypass grafts each year.[70]
No one has to wait longer for cancer treatments — surgery, radiation or systemic therapy (chemotherapy) — than the target wait time.	Patients anxious about a cancer diagnosis may experience high levels of stress waiting for treatment, which makes wait times undesirable, even if they do not statistically affect survival.	Ontario's more than 62,000 people who will be diagnosed with cancer this year and their families.[71]
No one has to wait longer for CT or MRI scans than the target wait time.	If a CT or MRI scan is not carried out promptly to find cancer, surgery may be delayed[72] and patients may experience unnecessary anxiety waiting for a diagnosis.	Ontario's residents who receive 1.8 million CT and 570,000 MRI scans each year.[73]

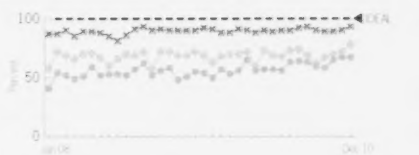
Procedure	Priority 1* (immediate)	Priority 2* (high urgency)	Priority 3* (medium urgency)	Priority 4* (low urgency)
MRI/CT scan	Immediate	2 days	10 days	4 weeks
Cataract surgery	Immediate	6 weeks	12 weeks	26 weeks
Hip and knee replacements	Immediate	6 weeks	12 weeks	26 weeks
Cancer surgery	Immediate	2 weeks	4 weeks	12 weeks
General surgery	Immediate	2–4 weeks	12 weeks	26 weeks
Cardiac procedures (coronary artery bypass graft, angiography, percutaneous coronary intervention†)	Wait time targets are specific to each patient.			
Cancer — radiation therapy	From 1 to 14 days depending on the patient's condition.			
Cancer — from referral to consultation with specialist for chemotherapy	14 days			
Cancer — from consultation with specialist to start of chemotherapy	14 days			

Data sources
* MOHLTC, Ontario Wait Times Strategy, provided by Cancer Care Ontario and Cardiac Care Network. Note that the wait for surgery is defined as starting the day the surgeon decides to operate and the patient agrees, and ending the day the surgery is performed. Target wait times vary depending on the priority score, indicating the seriousness of the conditions, assigned by the main physician.
† Also known as balloon angioplasty, where a catheter with a balloon is threaded into the artery of the heart to open blockages. Usually, a stent is inserted to keep it open.

HOSPITAL
LONG-TERM CARE
HOME CARE
PRIMARY CARE

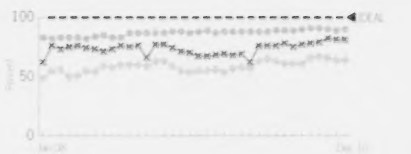
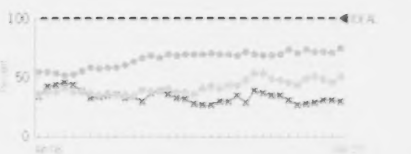
Indicator — specialist wait times	Value	Time trends & comparisons	Bottom line
Percentage of people who report waiting four weeks or more for an appointment after they were advised to see or decided to see a specialist doctor (or consultant)	51%*		**Half of Ontarians report waiting four weeks or more for an appointment to see a specialist doctor (or consultant). Compared to 10 other countries surveyed, Canada and Ontario have the worst standing on achieving timely access to specialist doctor/consultant care. There is major room for improvement.**

Data sources:
* Based on Commonwealth Fund International Survey of Physician Practices, 2010

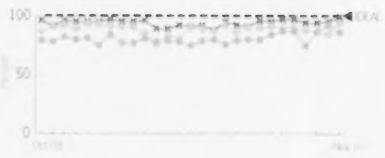
Indicator — cancer wait times	Value	Time trends & comparisons	Bottom line
90th percentile wait time for cancer surgeries	51 days*		**The maximum amount of time nine in 10 people will wait for cancer surgery is just under two months. Wait times decreased from 2005 to 2008, but there have been no further improvements in the past two years. There is still room for improvement.**
Percentage of cancer surgeries done within target: → Priority 2 → Priority 3 → Priority 4	 67%* 78% 93%		**One-third of urgent (priority 2) cancer surgery patients are not getting their surgery within the recommended two weeks. This is still a major problem to be addressed. The results for priority 2 do appear to have improved in the last year, but it is possible that much of this apparent improvement may have been due to changes in coding practices. The number of cases coded priority 2 have dropped by 40%, while priority 3 and 4 cases have increased by 17% and 25%, respectively.**
Percentage of patients where radiation therapy started within target (from being ready to treat to getting treatment)	84%**		**More than eight in 10 patients receive radiation therapy within the targeted time. This has improved in the past two years, but opportunities to improve further need to be explored.**
Percentage of systemic treatment (chemotherapy) completed within target: → Referral to consult → Consult to treatment	 61%** 47%		**Nearly two-thirds of patients needing systemic treatment are seen by a specialist within the 14-day target. This indicator has improved in the last two years. After being seen by the specialist, almost half of the patients receive treatment within 14 days. This component of a patient's wait, however, has not improved. There is still significant room for improvement.**

Data sources:
* Cancer Care Ontario and Wait Times Information System; data values represent data for December 2010.
** Cancer Care Ontario; data values represent data for December 2010.

2.3

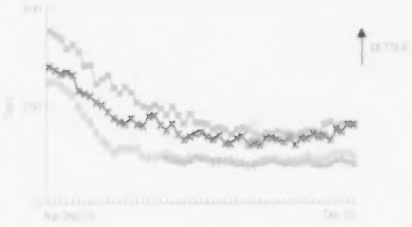
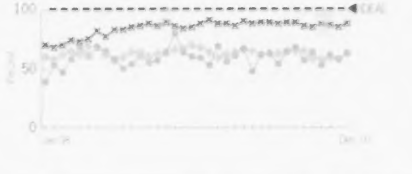
Indicator — CT/MRI wait times	Value	Time trends & comparisons	Bottom line
90th percentile wait time for: — CT scans — MRI scans	29 days* 113 days		The maximum amount of time nine in 10 people wait for a CT scan is about one month. This is a remarkable improvement; back in 2005, the wait was almost three months. Wait times for MRI, however, remain stuck at around four months, the same level seen in 2005. Wait times did decrease in 2008 but have since rebounded upwards to their previous level. The number of CT scans has almost doubled in the last seven years, while the number of MRI scans has almost tripled.[74] These increases in volume appear to have helped reduce waits for CT, but not for MRI. Clearly, there is room for improvement, particularly for MRI wait times.
Percentage of CT scans done within target: — Priority 2 — Priority 3 — Priority 4	90%* 64% 81%		Over the past three years, the percentage of CT scans done within the target time has improved at all priority levels. High priority patients are the most likely to have their CT scan done within the target time, which is reassuring. While the improvement is encouraging, there is still room to do better.
Percentage of MRI scans done within target: — Priority 2 — Priority 3 — Priority 4	75%* 51% 30%		Over the past three years, MRI waits have improved for urgent priority (2) cases but gotten worse for low priority (4) cases. At present, three-quarters of urgent priority patients received an MRI within the target time frame, but only 30% of priority 4 patients did so. There is major room for improvement.

Data sources:
*Cancer Care Ontario and Wait Times Information System; data values represent data for December 2010.

Indicator — cardiac wait times	Value	Time trends & comparisons	Bottom line
90th percentile wait times for: — Coronary artery bypass graft — Angiography — Percutaneous coronary intervention	33 days* 17 days 15 days		The 90th percentile wait times for each of these cardiac procedures have remained fairly constant over the past three years. There are peaks in wait times around January and August, coinciding with post-holiday periods.
Percentage of coronary artery bypass grafts done within target: — Urgent — Semi-urgent — Elective	86%* 94% 99%		Almost all elective and semi-urgent coronary artery bypass grafts are done within the target time. There is some room for improvement for urgent cases as the rate is 86%.
Percentage of angiographies done within target: — Urgent — Semi-urgent — Elective	85%* 70% 98%		Almost all elective and 85% of urgent angiographies are completed within the recommended timeframe. There has been improvement from the previous year for semi-urgent cases; however, there is room to do better.
Percentage of percutaneous coronary interventions done within target: — Urgent — Semi-urgent — Elective	85%* 79% 98%		For elective percutaneous coronary intervention, the results look good as the rate of cases done within target continues to be close to 100%. Performance for urgent cases, however has declined. Two years ago, 99% were done within the target time; the current figure is 85%. For semi-urgent cases, there are on-going challenges as the current result (79%) has not improved in the last two years. There is room for improvement.

Data sources:
* Cardiac Care Network, November 2010. Note that some patients move between urgency categories.

2.3

Other indicators	Value	Time trends & comparisons	Bottom line
90th percentile waits for:			The maximum amount of time nine in 10 people wait for hip or knee replacement is just under seven months, and for cataracts, four months. This represents a remarkable improvement as waits are less than half of what they were in 2005. These improvements result from the province's Wait Times Strategy[63] which provided incentives to do these procedures, created an information system to track wait times, and offered coaching teams to help hospitals do these procedures more efficiently. One cautionary note is that these wait times were at their lowest point in 2009 and in 2010 they increased slightly by about two weeks; in the future, it will be important to monitor these results carefully to ensure that Ontario holds the gains it made in the last few years. General surgery wait times have been tracked only in the past three years, and have been steady at just over three months.
— Hip replacement	206 days*		
— Knee replacement	200 days		
— Cataract surgery	122 days		
— General surgery	97 days		
Percentage of cases done within target			More than nine in 10 patients requiring low or medium urgency general surgeries are served within the target time. Wait times are generally stable. High priority patients, who account for 6% of all surgical cases, have more difficulty getting their surgery on time, although their needs are the most pressing. There is room for improvement for high priority cases.
General surgery:			
— Priority 2	83%*		
— Priority 3	91%		
— Priority 4	97%		
Cataract surgery:			Almost all low urgency cataract surgeries and almost seven in 10 medium urgency cataract surgeries are completed within the target time. These cases account for 97% of cataract surgeries. There is still room to improve for high urgency cases.
— Priority 2	66%*		
— Priority 3	69%		
— Priority 4	96%		
Hip replacement:			More than one-quarter of hip replacement patients and more than one-third of knee replacement patients are not treated within the target time. High priority patients continue to have greater difficulty getting their surgery completed within the recommended timeframe. Early improvements that were seen have stalled in the past year. There is room for improvement.
— Priority 2	74%*		
— Priority 3	66%		
— Priority 4	84%		
Knee replacement:			
— Priority 2	63%*		
— Priority 3	63%		
— Priority 4	88%		

Data sources:
* Cancer Care Ontario and Wait Times Information System; data values represent data for December 2010

Root Cause

People are placed on waiting lists for procedures they don't need. One study found 27% of people who got cataract surgery did not get improved vision, and may not have needed it in the first place.[75] Another study suggests 26% of CT and MRI scans for headaches are inappropriate.[76] Overuse of CT is potentially dangerous; each CT scan emits 100 times the radiation of standard X-rays.[77]

Overuse may be due to providers not following best evidence when ordering a test or procedure, or the patients wanting a procedure without understanding risks and benefits.

People are getting a procedure for a problem that could have been prevented with better health habits.

Queues may vary in size between different sites that provide a service. Those who are "stuck" in a particularly slow queue may have very high wait times.

There is natural variation in demand and sometimes surges in demand occur, which can lead to a major increase in wait times.

Even if the demand and supply of services is matched, any queue that may have built up in the past will persist and lead to people waiting unnecessarily.

There are inefficiencies in arranging surgery. This may include delays or errors when sending booking information or delays in arranging preoperative tests or consults.

Demand is greater than the available supply of services, and in many cases is growing. In some instances, the demand for surgery is not measured and the capacity for the procedures is inadequate.

Ideas for Improvement

Implement appropriateness criteria to ensure that patients truly require surgery or a specific test. (See section 6.4 for more about avoiding unnecessary drugs and tests). There are objective criteria for determining urgency for certain procedures (e.g., hip or knee replacement[78,79,80,81], and cataract surgery[82,83]), but no requirement to use them at this time. Provider education and tools that provide clinical decision support would help ensure that patients receive CT scans and MRIs in the most appropriate circumstances. MOHLTC and University Health Network in partnership with St. Joseph's Healthcare Hamilton have developed an online CT and MRI decision support tool for use by providers.[85]

Use priority tools. These are designed to prioritize patients on scheduled waiting lists to ensure that those who are at greatest need receive the procedure first.[86,87]

Adopt strategies to improve health habits (see section 9.1). Tackle obesity, which worsens arthritis and can lead to more hip and knee replacements.[88] Reduce smoking, which can lead to coronary artery disease and more cardiac procedures.

Pool different queues into a single queue. At a typical bank, having a single line where each person goes to the first available teller is far more efficient than having a separate line for each teller. Based on this principle of queuing theory[89], several LHINs have implemented centralized bookings for surgical procedures, specialist appointments and diagnostic tests to reduce wait times.[90,91]

Queue management principles suggest that to accommodate surges in demand, **at least some slack capacity is needed** to keep wait times low.[92] This is true for both the surgery and other services that need to happen before and after. Complex surgeries may require the patient to stay in the intensive care unit (ICU) afterwards. Potential solutions include innovations in surge capacity, evening out surgical procedures and/or a surgical ICU throughput unit for short length of stay post-operative ICU patients.

Work down the backlog.[93] Temporarily increase the rate of procedures being performed until this backlog is eliminated, and then return to the previous rate.[94]

Implement standardized processes for arranging surgery. This could include on-line booking tools (instead of relying on paper-based referrals that can be illegible or get lost) or standard checklists for patients and providers to ensure all steps are arranged well in advance.

Measure demand for surgical services and respond accordingly. This should be done routinely so the capacity for procedures can be adequately matched to the demand. That is, balance supply and demand.[95] Careful monitoring of incoming demand, projections of future demand, and careful planning of the number of procedures needed now and in future years will help to ensure the demand is met.[96] Consider all possible ways to introduce efficiencies before adding additional capacity.

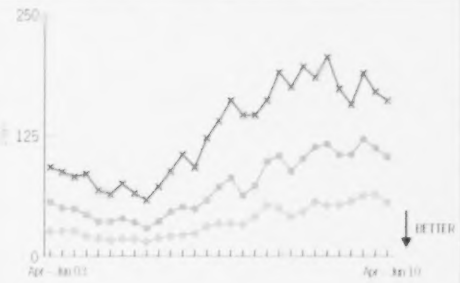
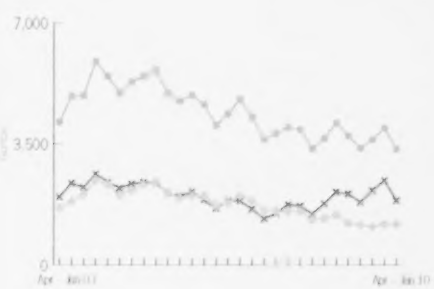
What is Ontario doing?

- MOHLTC committed $53 million towards capital project costs and $8.5 million towards annual funding for the Stronach Regional Cancer Centre. It is expected to provide radiation treatment to more than 2,400 patients annually.[97] It currently delivers 7,500 chemotherapy treatments annually, a number expected to increase by 10% to 15% annually until 2013. By 2012, it should accommodate 100,000 outpatient visits annually.[98]
- Through the Wait Times Website, Ontarians have access to the most comprehensive surgical wait time information in Canada.[99]
- The MRI Process Improvement Program has provided 17 hospitals with on-site coaching and training to improve efficiency and access to diagnostic imaging and lower MRI wait times. It will support all Ontario hospitals with an MRI scanner by FY 2011/2012.[100]
- The Peri-Operative Coaching Program has provided 61 hospitals with on-site and remote peer coaching to improve the efficiency and quality of pre- and post-operative care and reduce surgery wait times.[101]

2.4 Access to long-term care and home care

A central role of home care is to help people who have difficulty caring for themselves continue to live independently. In Ontario, community care access centres (CCACs) arrange services such as nursing, personal support, physiotherapy, occupational therapy, speech-language therapy, social work, nutritional counselling, medical supplies and equipment.[102] When people can no longer stay at home, even with home care, CCACs arrange placements to long-term care (LTC) homes.[103] Normally, the person and/or his or her loved ones select up to three homes, in order of preference. Once it is determined that someone needs LTC, it is vital to place them as quickly as possible or they may not get the care they require and, if their condition deteriorates, those caring for them at home may struggle to cope.

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
No one has to wait a long time to get into an LTC home.	People waiting at home for LTC may be at risk of further decline and may place a heavy burden on loved ones who are caring for them. People waiting in hospital for LTC are occupying hospital beds unnecessarily, and this can lead to overcrowding in emergency departments and wasted resources.	Ontario's 21,500 seniors who are on the waiting list for placement into an LTC home each year, and their families and caregivers.[104]
As many people as possible get their first choice of LTC home.[105]	When people are placed in their second or third choice for an LTC home, they may end up further from loved ones or in a home that doesn't specialize in meeting their ethnic, cultural or medical needs. It is possible for LTC residents to move to a higher-ranked choice later, but this may be inconvenient and disrupt continuity of care.	
No one has to wait a long time to get home care services.	People waiting for home care services may experience a decline in their condition, and this may result in hospitalizations that could have been avoided.	Ontario's more than 585,000[106] home care clients who receive services from CCACs each year.

Indicator	Value	Time trends & comparisons	Bottom line
Median number of days to LTC home placement:			**Wait times to get into an LTC home are too high. The median wait time is 3.5 months. The wait time for those placed from home is over five months, and for those placed from hospital, it is almost two months.**
Overall placements	103 days*		**Wait times increased sharply between 2005/06 and 08/09. In the most recent 12 months, however, overall wait times have stopped increasing. This suggests that the problem is starting to stabilize. The reasons for this remain to be determined, but it is possible that the province's Aging at Home strategy (see below) may have helped stabilize waits. However, the problem is still far from being fixed. The current overall wait is still nearly three times higher than in the spring of 2005.**
Those placed from hospital	56 days		
Those placed from home	161 days		
LTC home placement volumes:			**The way people enter LTC has shifted recently. In the past year, the number of people placed into LTC from hospital dropped by 19%, while the number placed from home rose by 15%.[107] This could be because many communities are adopting a "Home First" approach,[108] where hospital patients who might have in the past been referred straight to LTC are instead offered additional home care services to help them return home and allow them to make their decision about future LTC placement at home.**
Overall	3,348		
Those placed from hospital	1,179		**The wait time for those placed from hospital has increased by 10 days in the past year even though fewer people were admitted to LTC from hospital, possibly because less complex patients are better candidates for the Home First approach, while those remaining take longer to place. The decrease in patients being referred to LTC from hospital is a welcome step to help address the problem of Alternative Level of Care patients occupying beds in hospitals, but it is important to ensure that that excessive burden is not put on informal caregivers at home in the process.**
Those placed from home	1,860		

Data sources:
* MOHLTC Long-term Care Client Profile Database, April to June 2010.

HOSPITAL
LONG-TERM CARE
HOME CARE
PRIMARY CARE

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of residents placed in LTC who got their first choice of home the first time around	39%**		**Only four in 10 people waiting for LTC placement got their first choice when placed for the first time. This has not changed in the last four years. The province currently encourages people waiting for LTC placement while in hospital to take the first available choice among their top choices.[109] While this can help reduce Alternative Level of Care bed days (see section 6.2), it makes it challenging to improve on this indicator.**
Percentage of Ontario seniors newly receiving nursing home care following hospital discharge, by time to first nursing service visit — 0–1 days — 2–3 days — 4 or more days	 62%*** 19% 19%		**More than half of all people discharged from the hospital who require home care services are receiving their first nursing visit within one day. Over the past four years, no major changes have been seen in this indicator. Nearly 20% of post-acute patients who need home care services are waiting more than four days for their first nursing visit. This suggests there may be room to improve.**

Data sources:
** MOHLTC Long-term Care Client Profile Database, FY 2009/10.
***Home Care Database ; Discharge Abstract Database, Registered Persons Database, FY 2009/10.

2.4

Root Cause

Ideas for Improvement

Issue: LTC waits and people in LTC who don't necessarily require it

Services needed exceed what caregivers can provide and what home care can offer. Reasons may include:

- Family caregivers, who provide 80% of home care for individuals with chronic conditions[110], may burn out or have health problems themselves, and then can no longer provide care.
- The person is socially isolated and has no family caregivers.
- The person cannot afford to pay for extra care (e.g. more home care or retirement home).
- The person and/or family are not aware of options.
- A CCAC can only provide a level of service that its budget allows.

There were **missed opportunities to prevent a decline in health** that led to admission to a LTC home. These could include:

- Preventable falls or injuries
- Deterioration of a chronic condition
- Poor health habits
- "Deconditioning" among hospitalized patients; being in an unfamiliar environment like a hospital can accelerate one's loss of physical function.

Premature labelling of hospital patients as needing LTC. When people go to hospital with a sudden worsening of their condition, they may be told to go to LTC before they have had a chance to recover.

People who fear long waits may want to get themselves on the list "just in case." Recent data indicates that 22% of clients placed in LTC Homes have MaPLE scores that are not high or very high indicating they could potentially be placed elsewhere (see section 6.2).

The following are alternatives to long-term care placement:

Respite care for family caregivers[111,112] (e.g. allow placement of a person in a hospital for a limited time to give caregivers a break).

Community support or day programs.

Extended home care hours or services. This could include nursing, rehabilitation, home making, meals on wheels, and personal support services that include dressing, personal hygiene, assisting with mobility, monitoring of medicine use and other routine activities of living.[113]

Supportive housing/assisted living arrangements. These are publicly funded or subsidized housing options where people live in their own apartments but there are caregivers available on site to provide more frequent services. Planners in Lethbridge, Alberta using this lower-cost model have kept LTC waits to less than a month, while using one-third fewer LTC beds per capita than in Ontario.[114] At present, there are some such arrangements in Ontario[115,116], often managed by non-profit organizations. Rent subsidies are available to eligible seniors, but the criteria are stringent and waiting lists for subsidized units can be long. [117]Overall, Ontario does not have a coordinated province-wide plan for supportive housing. This is now the third year that Quality Monitor has raised this issue.

Retirement homes can also provide some types of additional support, but are available only to those who can afford them.

Opportunities to preserve health include:

- **Falls prevention** (see section 4.5).
- **Better chronic disease management through** better monitoring or more consistent use of the right drugs or treatments. (see section 3.2).
- **Promotion of a healthy lifestyle** (see section 9.1).
- **Rehabilitation and other services for the frail elderly to combat de-conditioning in hospitals.**[118] Ontario's Senior Friendly Hospital Strategy has tips on making the physical environment more pleasant, increasing the use of assistive devices (e.g. canes and walkers), improved nutrition and better communication.[119]

The **"Home First"** approach, as noted above, aims to return hospitalized patients to their home first and avoid making a decision about LTC placement in the hospital. This approach gives the patient time to recover from the worsening of his or her condition, and allows home care workers to make a better assessment of an individual's true level of function.

Apply the MaPLE score[120] to objectively determine an individual's needs. Encourage those people who do not have high or very high needs to consider alternatives to LTC.

Root Cause	Ideas for Improvement
Issue: People do not get their first choice for LTC.	
There are not enough LTC homes serving specific populations.	**Consider planning for more capacity,** or shifting existing LTC bed capacity, to serve ethnic or linguistic groups or communities that have particularly long waiting lists. With more options available, individuals might have a better chance of getting their first choice.
The community lacks sufficient LTC capacity to meet local needs. Some people may wish to stay in a community where their family resides or where they have support, but there may be little LTC capacity there.	**Establish regional plans for LTC.** Residents should not have to move far outside their communities to receive LTC. **Establish more specialized services** — for example, programs that target individuals with complex behavioural issues or medical complexities.[121, 122]

What is Ontario doing?

- The province's Aging at Home strategy[123, 124] is a $700 million investment over three years (2008/09 to 2010/11) with the aim of enabling seniors and their caregivers to live healthy, independent lives in their own homes and avoid premature admission to LTC homes. LHINs are using this funding to provide enhanced home care and community support services, as well as fund innovative projects with their LHIN.[125]
- MOHLTC is rebuilding 4,183 existing beds and updating facilities at 37 LTC homes.[126] This is part of a provincial plan to redevelop 35,000 older beds over 10 years to help improve access to LTC throughout Ontario.[127]
- Since 2003, MOHLTC has created 8,032 new LTC beds, and it will be opening an additional 1,942 LTC beds over the next few years.[128]
- In 2008, MOHLTC announced the Strengthening Home Care Services in Ontario strategy, which consists of four key deliverables to strengthen home care: improving accountability for the provision of quality home care services through public reporting on quality measures; delivering improved health outcomes for Ontarians through the Integrated Client Care Project; enhancing fairness, transparency and communication in the competitive procurement process; and promoting innovation and flexibility in service provision.[129]

3.1 Receiving the right treatments in hospital

People are commonly admitted to hospital following a heart attack, stroke or worsening of congestive heart failure[135], and the appropriate administration of certain medications can save lives, prevent future complications of an illness and preserve health. Meanwhile, for pregnant women, it is important that obstetrical units provide a supportive environment for women to deliver their baby safely and effectively. Caesarean sections should be done only when necessary.

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
Appropriate administration[†] of a beta-blocker,[131] a statin to lower cholesterol[132] and an angiotensin-converting enzyme inhibitor (ACEI)[133] or angiotensin-receptor blocker (ARB)[134] to people who have had a heart attack (acute myocardial infarction — AMI).	Patients may experience more strokes, repeat heart attacks and death.	Ontario's 20,000 people hospitalized for heart attacks each year.[135]
Appropriate administration[†] of an ACEI/ARB[136] and a beta-blocker[137] for most people who have congestive heart failure. Patients with the slightly more common[138] "systolic dysfunction" form of heart failure (weak pumping action) should get these drugs; for those with the "diastolic dysfunction" form (stiff heart wall), these drugs should be considered.[139,140]	Patients may experience more hospitalizations, worse quality of life and death.	Ontario's 16,000 people admitted to hospital with congestive heart failure each year.[141]
Appropriate administration[†] of acetylsalicylic acid (ASA, or aspirin) or an anti-thrombotic drug (blood thinner)[142] for people who have had a stroke.	Patients may experience more repeat strokes.	Ontario's 16,000 people who experience a new ischemic stroke each year.[143]
Appropriate administration[†] of a clot-busting drug for people who can get to a major hospital right after symptoms of a stroke begin.[144]	Patients may experience more disability (e.g., loss of use of arm or leg, or speech) and death.	
An effective method of delivery for women in labour. Caesarean sections are performed only when necessary.	Caesarean sections may lead to higher infection rates,[145] increased respiratory distress of the newborn,[146] a stay in hospital that is twice as long, increased risk of readmission to hospital and increased cost to the system.	Ontario's over 135,000 women who give birth in Ontario each year.[147]

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of elderly patients with AMI who, within 90 days of discharge, filled a prescription for the recommended drugs:			**Over the last seven years, there has been major improvement in the use of statins after a heart attack (from 67% to 87%). However, there has been little change in the use of beta-blockers and ACEIs/ARBs.**
— Statin	87%*		**Use of all three drugs at once has improved over the last seven years, but the percentage has levelled off in the last two years. There is room for further improvement as guidelines suggest it may be possible to increase the use of these drugs to 90%.[148]**
— Beta-blocker	79%		
— ACEI/ARB	79%		
— All three at once	59%		
Percentage of elderly patients with congestive heart failure who, within 90 days of discharge, filled a prescription for the recommended drugs:			**The use of beta-blockers for congestive heart failure patients after discharge has increased over the past seven years, while ACEI/ARB use has decreased over the same time period. There is probably room for improvement in the use of these drugs, although making a definitive conclusion on that will be possible only when Ontario has better data on what type of heart failure patients have (see data advocacy section, 1.12).**
— ACEI/ARB	71%*		
— Beta-blocker	66%		
— Both at once	50%		

Data sources:
* Registered Persons Database, Discharge Abstract Database (DAD), Ontario Drug Benefits Database, FY 2009/10, calculated by Institute for Clinical Evaluative Sciences (ICES). These indicators are calculated only for patients aged 66 and older, as data on drug use was only available for this group. The indicators track prescriptions filled. Some people might fill the prescription but not actually take the drug; hence, the rate of actual use may be lower.
† These drugs should be used except when contraindicated, such as allergy to the drug.

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of acute stroke patients discharged on ASA or anti-thrombotic therapy	92%**		**About nine in 10 stroke patients are receiving the recommended blood-thinning drug when they are discharged from hospital. This indicator has not changed in the last four years. The typical rate of allergies or sensitivity to these drugs[149,150] is close to the rate of people not on these drugs (8%); hence, there is probably little if any room for improvement.**
Percentage of ischemic stroke patients eligible for thrombolysis (clot-busting drug) who get it within one hour of arriving in the emergency department[11]	13%**		**Only one in eight patients who had a stroke and could benefit from clot-busting drugs received those drugs within one hour of arriving in the emergency department. Although gains have been made over the past six years, there is still huge room for improvement.**
Rate of delivering via Caesarean section (per 100 deliveries)	29***		**The Caesarean section rate in Ontario is 29%. This has not changed in the past four years. Among low-risk mothers, 15% of pregnancies were delivered by Caesarean section.** **The overall Caesarean section rate is higher than the World Health Organization's recommended rate of 15%.[151] However, the validity of this target is disputed and there is no consensus in Canada on what the ideal rate should be. Nonetheless, these rates should be monitored carefully and opportunities to avoid unnecessary Caesarean sections should be explored.**
Rate of low-risk[§] first-time mothers who deliver a full-term baby via Caesarean section (per 100 deliveries)	15§		

Data sources:
** Registry of the Canadian Stroke Network, FY 2009/10, calculated by ICES. This indicator looks at ischemic stroke/transient ischemic stroke patients discharged alive from the emergency department or an acute in-patient setting of a regional stroke centre (note that this analysis does not include hemorrhagic stroke).
*** DAD, calculated by ICES, FY 2009/10. Indicator methodology adapted from the POWER Report.[11]
† Niday Perinatal Database, FY 2009/10, provided by BORN Ontario.
[11] This indicator looks at ischemic stroke patients who arrive at the emergency department of a regional stroke centre within 2.5 hours of stroke symptom onset.
§ Low-risk women are those who do not have many of the common indications for a C-section. They are first time mothers and therefore could not have had a past C-section; the baby's head is pointing downwards; the baby is not premature; the labour was spontaneous; and it is a single pregnancy (i.e. not twins). They may still have a C-section if the labour is not progressing.

3.1

Root Cause

Issue: Drug management.

Healthcare providers may not order the right drugs or treatments because of **information overload** — they are busy, distracted by other patient issues or there are too many things to remember.

Poor communication when care is transferred between providers could lead to information about the right treatments not being passed on. For example, there may be a good reason to initially delay giving a drug (e.g., beta-blockers for a heart attack), but whoever is handling the care at a later point must know that the drug should be started when safe to do so.

Providers are not aware of how closely they are following guidelines.

Patients do not fill prescriptions given to them at discharge. This could be because they fear the side effects, or do not understand when, why, how to, or how long to take the drug. Some drugs have minor side effects that require some getting used to; if the patient does not know that, he or she may discontinue the drug prematurely.

Medication discrepancies put patients at risk of medication errors. This happens when someone enters or leaves hospital, and there is confusion about what drugs he or she was on previously.

Issue: Timely thrombolysis of stroke patients.

Diagnosis of stroke is delayed. This may occur if a patient goes to a centre that does not have the right equipment or special skills in handling strokes.

Poor hand-offs or communication might delay timeliness. One US study found major delays between writing the order and giving the thrombolysis drug.[171]

Ideas for Improvement

Increase the availability and use of standardized admission orders, discharge checklists, standardized care plans or algorithms to help decide when to order a drug or test.

Use clinical decision support systems to guide prescribing choices. Increase the use of electronic health records (EHRs) that can guide clinicians' decisions and generate clinical reminders.[151] Such systems provide recommendations on when to start, monitor, or stop treatments and can identify safety issues (e.g. dangerous drug combinations). These systems may have a useful influence on provider behaviour[154] and patient outcomes,[155] especially when they deliver timely and relevant information, suit local needs (avoiding a "one size fits all" approach) and are accompanied by ongoing technical support.[156]

Provide regular feedback to prescribers. For example, the Enhanced Feedback for Effective Cardiac Treatment (EFFECT) publicly releases hospital performance data on indicators for AMI and congestive heart failure treatments.[157] This data should also be provided at an individual provider level.[158]

Encourage hospital staff to review medications with patients prior to discharge[159,160] and ensure that patients leave hospital with printed information, including an easy-to-follow "meds list" with key changes noted. Providers can use the **"teach back" method** to ensure information has been understood by patients and caregivers.[161,162] Encouraging patients to keep meds lists also keeps them engaged in their own care.[163]

Follow-up by telephone and interactive voice response systems may help identify drug interactions and encourage newly discharged patients to take medications as prescribed.[164,165]

In one study, almost half of all patients had at least one medical error when discharged from hospital to the community.[166] **Encourage primary care providers to spend time with patients reviewing drugs after discharge**[167] — and ensure the provider has received hospital discharge information by the time this visit takes place.

Ensure stroke cases are sent by ambulance directly to designated stroke centres that have the most experience in handling stroke. This resulted in faster arrival times to a stroke centre in Toronto and a four-fold increase in getting thrombolysis to patients who need it.[168] This is also a recommendation from national stroke guidelines.[169]

Enhance telemedicine capabilities so that in rural hospitals, where stoke expertise may be limited, CT scans can be reviewed by neurologists and stroke experts located elsewhere.[170]

Create standardized processes and order sets for initiation of thrombolysis.[172]

Consider creating a specialized team to administer thrombolysis, as one hospital in Calgary has done.[173]

Root Cause

Ideas for Improvement

Issue: High Caesarean section rates.

More women may be having planned C-sections with no medical reasons. There is no data on how often this happens in Ontario, but it is a growing world-wide phenomenon.[174,175] Reasons may include: the convenience of knowing the delivery date in advance; fear of pain; and fear of complications of vaginal delivery (e.g. incontinence or vaginal prolapse). Also, a planned C-section is more convenient for providers, allowing for predictable scheduling.

Inform the public and healthcare providers about the risks of planned C-sections. Although overall risk of Caesarean section is small, planned Caesarean sections are associated with a three times greater risk of severe complications (e.g., hemorrhage requiring hysterectomy, cardiac arrest, venous thromboembolism, major infection) than planned vaginal birth,[176] as well as higher healthcare costs.[177] Efforts to educate can include individual discussions between patients and providers, as well as **public awareness campaigns**. For example, several New Jersey hospitals have signed onto a "Worst to First" campaign to reduce C-section rates to 15%.[178] Public campaigns can also emphasize that childbirth is a natural physiological process.[179]

Medicolegal concerns. Obstetricians already have the highest malpractice insurance premiums among specialists in Canada[180].

Use of **second opinions** and **applying objective criteria for C-sections**[181] were found in one study to reduce C-sections by one-third. It is possible that these approaches could help reassure obstetricians they are making the right decision to hold off on a C-section when they are worried about a potential medicolegal case.

Skill of provider — physicians may not feel comfortable with procedures that are alternatives to C-sections, such as forceps to rotate the baby into a better position for delivery,[182] trial of labour among women with past C-sections[183], or vaginal delivery of breech presentations.[184]

Consider augmenting **training standards for obstetricians, family doctors and midwives in training in the use of these skills,** or providing more **retraining opportunities** for existing practitioners who wish to sharpen these skills. **Emergency drills and patient simulators** allow health care providers to practice handling difficult situations as a team (similar to flight simulators for pilots), and their use in obstetrics could be greatly expanded.[185]

Unnecessary inductions. When labour is induced, the chance of a C-section is much higher.[186]

Set up protocols for appropriate induction. Doctors at a Pittsburgh hospital developed a protocol where elective inductions could be scheduled only if the baby was at least at 39 weeks and the cervix was "ripe" based on an objective score. Inductions were reduced by one-third and C-sections among first-time mothers being induced decreased from 35% to 14%.[187]

Lack of consensus among providers that C-section rates are a problem.

Audit and feedback mechanisms allow individual practitioners to regularly review their own data on measures like C-section rates, complication rates and adherence to guidelines and identify areas for improvement.[188]

Rising obesity rates. Obesity is associated with a two-fold higher rate of C-sections.[189]

Consider **population-based strategies to reduce obesity** overall (e.g. food labelling, healthy communities that promote physical activity, etc.; see section 9.1).

What is Ontario doing?

- The Champlain Get with the Guideline Initiative helps ensure that all patients in the Champlain LHIN who are admitted to hospital for a heart attack or symptoms of a heart attack get the best care.[190] Participating hospitals implement a discharge tool that includes care pathways, standard orders, discharge checklists, reminders and a data collection tool that tracks whether patients are getting all of evidence-based guidelines (e.g. the right drugs for heart attack). Hospitals also get several days of coaching time to help them use these tools correctly.
- The Ontario Mother and Infant Study is a multi-site investigation involving 2,500 Ontario women to assess the impact of planned Caesarean vs. planned vaginal delivery on maternal and infant health, service use and the cost of care.[191]

3.2 Chronic disease management

Chronic diseases, which require management over a long period of time, are widespread.[192] They affect one in three Ontarians and almost four in five Ontarians aged 45 and over. Among Ontarians with a chronic disease, about seven in 10 have two or more chronic conditions.[193] These conditions tend to get gradually worse over time and can result in pain, suffering, disabling complications or premature death.[194] There is also a tremendous economic burden associated with chronic diseases, with the expense amounting to 55% of total direct and indirect health costs in Ontario.[195] Although chronic diseases cannot be completely cured, lifestyle changes, medical treatments and careful monitoring can reduce the risk of getting them or slow their progression.[196] This year's report focuses on diabetes, heart disease and lung diseases. Future reports will aim to include other conditions.

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
Regular monitoring for people with chronic diseases (e.g., regular eye and foot exams for patients with diabetes).[197]	The consequences of not having regular eye and foot exams may include more blindness,[198] skin ulcers[199] and amputations.[200]	Ontario's 937,000 people with diabetes,[201] over 18,000 people who experienced a heart attack last year, and almost 16,000 people admitted to hospital with congestive heart failure each year.[202]
Healthy lifestyles for people with chronic diseases (e.g. avoidance of smoking, obesity, poor diet, physical inactivity and heavy drinking).[203]	Unhealthy behaviours can lead to worsening of chronic diseases and speed up the development of long-term complications or other conditions.[204,205]	
People with chronic conditions should be taking the right medications and feel confident about how to manage their own conditions.	For diabetes, the consequences may be more deaths and more complications, such as strokes, heart attacks, amputations and other surgeries for poor circulation, kidney failure and dialysis.[206,207,208,209] Other consequences may include avoidable hospitalizations and emergency department visits, which are stressful for patients and waste healthcare resources.[210]	

Monitoring and management of chronic diseases

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of people with diabetes who had an eye exam in the past 12 months	51%*		**Approximately half of people with diabetes received an eye exam in the past 12 months. This rate has been generally steady over the past 8 years. There is huge room for improvement; nearly all patients with diabetes should get this test regularly.**
Unhealthy habits of people with chronic diseases†: Heavy drinking Low fruit/vegetable consumption Physical inactivity Obesity Smoking	 18%** 57% 56% 25% 19%		**Smoking rates have improved significantly among people with chronic diseases in the past nine years. Rates of physical inactivity and inadequate fruit/vegetable intake have improved slightly, but heavy drinking and obesity have been on the rise. All of these self-reported rates are still too high, and there is still major room for improvement as healthy behaviours are critical for this population.**
Percentage of elderly people with diabetes (aged 66+) who, in the past year, regularly filled prescriptions for: ACEI/ARB‡‡ Statin Both at once	 67%*** 60% 48%		**Over time, Ontario has seen slow but steady improvement in the use of ACEIs/ARBs and statins among people with diabetes. However, there is still room to improve, since only half of elderly people with diabetes are getting both of these drugs and experts suggest most elderly people with diabetes should be receiving them.**[211,212,213]

Data sources:
*Ontario Diabetes Database (ODD), Ontario Health Insurance Plan, Registered Persons Database, FY 2009/10, calculated by Institute for Clinical Evaluative Sciences (ICES).
**Canadian Community Health Survey, 2009, calculated by ICES.
***Ontario Drug Benefits Database, ODD, FY 2009/10, calculated by ICES. This indicator tracks prescriptions filled. Some people might fill the prescription but not actually take the drug; hence, the rate of actual use may be lower.
† Includes high blood pressure, diabetes, arthritis, heart disease, cancer, asthma, respiratory problems and depression.
‡‡ ACEI=angiotensin-converting enzyme inhibitor. ARB=angiotensin receptor blocker.

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Complications of chronic diseases

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of people with diabetes for more than a year who had a serious diabetes complication within a year:			**Slightly more than one in 25 people with diabetes will experience a major complication of diabetes within a year. Last year, this amounted to 40,000 people in Ontario. The rates of these complications have decreased steadily in Ontario, which may be due to better use of drugs such as statins and ACEIs or decreased smoking (as noted above), or to earlier detection of diabetes. Despite the improvement in complication rates, there is room for even more improvement. As noted above, services like eye visits are not done reliably, and recent one-time studies in Ontario have identified major gaps in blood pressure, blood sugar and cholesterol control.[214] Ontario does not collect this information regularly, and needs to do so in the future (see data advocacy section 1.12).**
Any serious complication	4.30%*		
Surgery for circulation problem (including amputation)	0.15%		
Death	2.70%		
Heart attack	1.10%		
Stroke	0.51%		
Kidney failure	0.17%		
Adjusted mortality rate (chance of death) in the year after a congestive heart failure hospitalization	35**		**Over one-third of patients admitted to hospital for congestive heart failure die within the next year. There has been no improvement in this indicator over the last six years. There is likely room to improve.**
Adjusted rate of death per 100 heart attack patients between 30 days and one year after their first heart attack	9.1**		**One in 11 patients die within one year of having a heart attack. This has improved over the last three years. There may still be some room to improve — for example, by further reducing smoking rates.**

Data sources:
*Discharge Abstract Database (DAD), Ontario Health Insurance Plan physician billings database, Registered Persons Database (RPD) and Ontario Diabetes Database (ODD), FY 2009/10, calculated by Institute for Clinical Evaluative Sciences (ICES). Complication rates adjusted for age, sex and number of years since diagnosis of diabetes.
**DAD and RPD, FY 2008/09, calculated by ICES. Mortality rates adjusted for age and sex. Indicator methodology adapted from the POWER Report.[215]

3.2

Root Cause

It is challenging for providers to follow best practice guidelines 100% of the time. This may be due to:[216,217,218,219]

- **Information overload.** It is easy to forget to order a drug or test, or keep track of latest guidelines.
- **Organizational barriers** (e.g. difficulty accessing information about the patient that could change a clinical decision)
- **Scepticism** about the validity of the evidence.

It is difficult for healthcare providers to manage frail elderly patients with multiple chronic conditions. Managing these patients well may require a more intensive level of monitoring or more specialized expertise.

Patients may not be engaged in their own care. People may not be motivated to change, or may not feel as if they have the power to do so.

Ideas for Improvement

Use flow sheets in patient charts.[220] Flow sheets are one-page documents with checkboxes to record compliance with best practices for each patient encounter. The Canadian Diabetes Association has a recommended version for diabetes.[221]

Reminder systems prompt a health care provider to perform a particular action (e.g. remember when it is time to schedule another annual eye exam), and can be paper-based or electronic.[222,223]

Have a well-functioning electronic medical record (EMR). EMRs often have flow sheets and reminder utilities built into the software. **Decision support features** in EMRs go beyond reminders and help providers choose among treatment options, such as drugs that are recommended in specific clinical circumstances (e.g., diabetes).[224, 225] One clinical decision support system improved rates of prescription of hypertension drugs by 32%.[226]

Provide confidential feedback on a clinic or provider's performance according to best practice guidelines, to give them an idea of how they are performing and to help them identify areas for improvement.[227, 228, 229]

Opinion leaders can help encourage the adoption of evidence-based practices. Identified by their peers, these "educational influentials" operate within their communities to teach and facilitate change.[230, 231]

For best results, simultaneously employ as many as possible of the change ideas noted above. Multifaceted interventions are the most likely to be successful in changing provider behaviour.[232]

Consider establishing specialized clinics for chronic disease(s), such as diabetes or congestive heart failure, staffed by a multidisciplinary team. A review of heart failure treatment programs found that patients receiving this type of care had approximately 25% reduced risk of mortality and hospitalization for heart failure.[233] An anticoagulation clinic set up in Peterborough has achieved an 80% rate of patients on anticoagulation medication in the safe dosing range (vs. 55% of patients in usual monitoring).[234]

Employ telemedicine technology to monitor patients. Consider using "tele-homecare" to monitor and communicate with patients,[235] especially those who are house-bound or who live in remote locations.[236,237]

Promote **patient self-management** of behavioural risk factors and chronic disease (see section 9.1). Congestive heart failure patients who self-monitor their weight daily can spot warning signs of worsening congestive heart failure quickly and get their medications adjusted before they need to go to hospital.[238] Improve access to **health education and health promotion** activities and materials.[239, 240, 241] (see section 9.1).

What is Ontario doing?

- The Ontario Diabetes Strategy has two public targets: ensuring that all people with diabetes have access to a primary health provider and that 80% of people with diabetes, aged 18 and older, have all three diabetes tests (cholesterol, retinal eye exam and A1C) within recommended guidelines for optimal diabetes management.[242] As part of this strategy, MOHLTC is creating 51 new diabetes education teams, expanding chronic kidney condition services, creating up to 14 regional coordination centres and expanding diabetes care and prevention resources.[243]
- Primary and specialty care providers in Peterborough have implemented a population-based care model for vascular disease called the Comprehensive Vascular Disease Prevention and Management Initiative (CVDPMI). This initiative targets the asymptomatic "non-help-seeking" patients and uses the electronic medical record and practice protocols to screen them for conditions like high blood pressure or high cholesterol. Those found to be at high risk for vascular events receive dietary counselling, lifestyle management planning and medications where needed. Initial clinical findings show that CVDPMI patients have an up to 50% reduction in cardiac event risk. [244]
- MOHLTC plans to further reform the prescription drug system by reducing the cost of generic drugs by at least 50%, eliminating excessive payments to pharmacy owners from generic drug companies, and offering patients in rural communities wider access to lower-cost drugs.[245]
- The Heart & Stroke Foundation recently launched an online Heart & Stroke Risk Assessment Report for self-evaluation based on a short, simple survey that looks at risk factors for heart disease. [246] It also started the Heart & Stroke Foundation Hypertension Management Initiative and Program helps primary care providers and patients improve hypertension control. It includes flowsheets, reminders, audit and feedback tools, automatic blood pressure cuffs and support in implementing these ideas, which is designed to enhance the management and control of hypertension by primary care providers, including doctors, nurses and pharmacists, and patients.[247]

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3.3 Potentially avoidable hospitalizations

People who are frail with multiple chronic conditions require hospitalization if their condition deteriorates. Often, however, these hospitalizations could be avoided. Ambulatory care sensitive admissions (ACSCs) is a measure which tracks admissions which took place for a condition which, if carefully managed in a primary care setting, might have resulted in not needing to go to hospital. Another measure is readmissions, which can occur if there is not a smooth handoff from the hospital to primary care providers or home care.[250,251,252] Readmissions are tracked using two methods: one that tracks readmissions for the same condition, and follows a national definition that allows for provincial comparisons, and another that tracks readmissions for all causes, which is currently in more common use in Ontario.

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
The best possible management of chronic diseases, so that people are less likely to be admitted to hospital.	Worsening of a chronic condition that could have been avoided and that results in admission means worse quality of life, increased stress, exposure to risks while in hospital (e.g. hospital acquired infection), increased burden on family and wasted healthcare resources.[251]	The Ontarians who contributed to the over 34,000 potentially avoidable hospital admissions last year.[252]
Effective treatment in hospital and proper follow-up care arranged in the community to avoid readmission.	When patients are readmitted, their health may worsen and, along with their families, they may experience lost time and economic productivity. In addition, unnecessary readmissions increase the cost of hospital care.[253]	Ontario's residents who visit an emergency department or hospital.

Ambulatory care sensitive conditions

Indicator	Value	Time trends & comparisons	Bottom line
Hospital admission rate per 100,000 population for all ambulatory care sensitive conditions (ACSCs)	278*		**In FY 2009/10, roughly 34,100 people were admitted to hospitals in Ontario for complications from chronic diseases that could potentially have been prevented with good primary care. The rate has decreased by 33% over the last seven years, and decreased by 5.2% compared to last year. There is still room for improvement.**
Interprovincial comparisons for overall ACSCs	**		**In FY 2008/09, Ontario had the second lowest rate of ACSCs compared to other provinces. However, there are individual regions within the country that have even lower rates — for example, in Richmond, B.C., the rate is 154 (almost half as low as Ontario's rate), and the Central LHIN rate is 183. This suggests that there is room to improve.**
Hospital admission rate per 100,000 population for: Chronic obstructive pulmonary disorder (COPD — e.g., emphysema, chronic bronchitis) Congestive heart failure (CHF) Asthma Angina Diabetes	84* 52* 40* 36* 32*		**COPD is currently the most common ACSC. Admission rates have not changed since FY 2002/03, and there is major room to improve.** **CHF is the second-most common ACSC. Admission rates declined from FY 2002/03 to FY 2006/07, and better use of certain drugs (e.g., beta-blockers) might have contributed to this trend. There has been no change in the last three years and there is major room to improve.** **The rate of asthma admissions improved significantly from FY 2005/06 to FY 2007/08, but there has been no change in the past two years. Continued improvement is necessary.** **Over the last seven years, there has been a 66% reduction in hospitalizations for angina, with a 13% reduction just in the last year. These improvements could be due to reduced smoking (section 9.1), better use of drugs like statins (section 3.1), and timely use of revascularization procedures (e.g. bypass or stents; section 2.3).[254] This is good news, and Ontario should continue to aim for more reductions.** **Diabetes hospitalizations have decreased by 26% over the last seven years, with much of the change seen in the last year. Continued emphasis is necessary to sustain this level of improvement.**

Data sources:
*Discharge Abstract Database, FY 2009/10, calculated by Institute for Clinical Evaluative Sciences.
**Canadian Institute for Health Information. Health Indicators. 2010. Note that minor variations in methodologies were used to calculate overall ACSC rates when comparing time trending to interprovincial comparisons.

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Readmissions

Indicator	Value	Time trends & comparisons	Bottom line
Readmissions for any reason:			**People who have been discharged from hospital for COPD or congestive heart failure have the highest rates of readmission for any cause in Ontario — higher than those who have been hospitalized for pneumonia or stroke.**
Congestive heart failure (age ≥ 45)	22%*		
COPD (age ≥ 45)	19%		
Gastrointestinal conditions (all ages)	16%		
Diabetes (all ages)	14%		
Cardiac conditions (age ≥ 40)	12%		
Pneumonia (all ages)	12%		
Stroke (age ≥ 45)	8.2%*		
Readmission rates for a specific or related condition:			**Readmissions over the past seven years have decreased by almost half for heart attack, which is good news. However, there have been only very slight improvements for COPD, CHF, asthma, diabetes, gastrointestinal conditions and stroke. There is huge room for improvement.**
Congestive heart failure	11%**		
COPD	7.7%		
Gastrointestinal condition	7.8%		
Diabetes	5.4%		
AMI (heart attack)	4.3%		
Asthma	3.9%		
Stroke	2.6%		
Readmission rates for specific or related mental health conditions:			**Nearly one in 10 individuals with schizophrenia or bipolar disorder is readmitted within 30 days of being discharged from hospital. This has not improved over the past three years. The complexity of care for psychotic illnesses is higher than for other conditions and non-adherence with treatment is among the biggest risk factors for readmission.[2,3] Improvement is necessary.**
Schizophrenia and bipolar disorder	9.6%		
Mental health and addictions	6.3%		
Depression	3.9%**		
AMI readmission rates for specific or related conditions across Canada	4.6%§		**Ontario has the second lowest rate of readmissions for people who have been hospitalized for an AMI. It is still behind Alberta, suggesting there may still be room to improve.**
Relationship between AMI readmission rate and percent of seniors who were on three drugs recommended for AMI after discharge‡			**Hospitals whose patients use more evidence-based drugs for heart attack after discharge also tend to have lower readmission rates.**

Data sources:
*MOHLTC–LHIN Performance Agreement, FY 2009/10.
**Discharge Abstract Database (DAD) and Registered Persons Database (RPD), FY 2009/10, calculated by Institute for Clinical Evaluative Sciences (ICES). All figures represent readmission rates to any acute care hospital within 28 days of discharge, for people aged 15 to 84, per 100 discharges.
§DAD, FY 2008/09, Canadian Institute for Health Information, Health Indicators, 2010. ‡The three drugs are beta-blockers, angiotensin converting enzyme inhibitors or angiotensin receptor blockers, and statins. Prescriptions had to be filled within 90 days after discharge. Each dot represents a group of hospitals within each category.

3.3

Root Cause

Patients do not get all the right medications while in hospital. (See scatterplot on previous page, which shows that low use of the right drugs is associated with higher readmissions.) Healthcare providers may not order the right drugs or treatments because they are busy, distracted by other patient issues or there are too many things to remember.

Administrators and healthcare providers may not be aware of the extent of the readmission problem.[258] In urban communities where multiple hospitals serve a large population base, readmitted patients may end up at a different hospital.

Pressure to free up beds may lead to premature discharge and subsequent readmission.

People are not getting the intensity of follow-up that they require.

Information about the admission and discharge plan is not quickly transferred to the patient's primary care provider or to community service providers. Failure to communicate relevant information may adversely affect patient care.[262, 263]

Patients may not understand instructions for their care following discharge from hospital — how to take their medications, what signs to look for or whom to call if they have concerns.

Poor coordination of transition from hospital to home.

Ideas for Improvement

Use standardized admission orders, order sets for common clinical conditions and discharge checklists, as well as EHRs that generate clinical reminders.[257] These can help remind prescribers to order the right drugs and coordinate integrated care after discharge. See section 3.1.

Feedback information on readmissions, or data on compliance with guidelines, should go to hospital administrators, providers and staff.[259] Ensure this data includes readmission to other hospitals. If possible, provide this information at an individual healthcare provider level to help each provider and unit develop their own quality improvement plans.[260]

Implement strategies to reduce avoidable demand for hospital beds. See section 2.1, 2.2 and 2.4

Do risk-scoring to identify patients at high risk for readmission, and arrange more intensive follow-up for them. One such tool, the LACE index, takes into account the length of stay ("L"); acuity of the admission ("A"); comorbidity ("C"); and recent emergency department use ("E").[261] High-risk patients could be referred to more intensive follow-up such as a specialized clinic or tele-home care.

Consider database-generated discharge summaries and other strategies discussed in section 8.1 to improve patient care during the transition from hospital to home.

Use a structured discharge summary for frail elderly patients, with standardized elements which contain information that healthcare providers in the community receiving the summary need to know to manage the patient well. This is the approach used by one team in Quebec.[264]

Consider contacting patients by phone 48 hours after discharge to ensure the planned treatment plan is progressing well.[265] Or, have patients return to hospital for an ambulatory visit soon after discharge.

Improve and expand the information given to patients and caregivers at discharge, incorporating "best practice" methods of communication,[266] and conduct teaching sessions that include patients and family members post-discharge. Providing patients with **written discharge instructions** has been shown to decrease readmissions, particularly for congestive heart failure.[267] See section 8.1 for details on the **"teach-back" method** and other communication strategies to improve patient understanding of care and discharge instructions.

Ensure better coordination among hospital, community service and primary care settings (see section 2.4). **Institute standard discharge follow-up protocols**[268] for frail patients, such as a home visit through a CCAC on the patient's first day post-hospital. To ensure a patient gets a follow-up primary care visit soon after discharge (e.g. one week), have hospital staff request or confirm the booking of the appointment.

Keep in touch with patients. An Ottawa-based project successfully used interactive voice response systems to monitor patients post-discharge.[269] An automated telephone recording asks patients certain questions about symptoms or use of drugs and patients enter their response. If there are worrisome responses, a nurse follows up with a phone-call.

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Root Cause

Patients with chronic conditions don't get the right monitoring.

Ideas for Improvement

Promote patient self-management (see section 9.1). Congestive heart failure (CHF) patients who self-monitor their weight daily can spot warning signs of worsening CHF quickly and get their medications adjusted before they need to go to hospital.[270]

Consider establishing dedicated clinics for chronic diseases, such as heart failure,[271,272] diabetes[273,274] and conditions requiring anticoagulation therapy.[275] See section 3.2 for more on how to improve the management of chronic diseases.

Patients develop infections while in hospital that may not appear until after the patient has gone home.

See section 4.1 for ideas on how to improve infection control.

Patients don't get the right rehabilitation services after discharge.

Set up appropriate home care to provide patients with rehabilitation and monitoring of conditions.

Consider arranging a **falls risk assessment** through a CCAC soon after the patient has returned home.

What is Ontario doing?

- The "Virtual Ward" project,[276] funded by MOHLTC and being piloted at several sites, improves transitions from hospital to home by combining the best aspects of hospital, primary and home care after hospital discharge. Launched in March 2010, the project is an innovative partnership between the Toronto Central CCAC,[277] St. Michael's Hospital and Women's College Hospital. Toronto Central LHIN[278] is also participating. The partners are working together to create an integrated team — including an attending physician and nurse practitioner from the hospital and a care coordinator, pharmacist and nurse practitioner from the CCAC — to support clients discharged from hospital who are at high risk for readmission. This team meets daily to discuss the care management of clients on the virtual ward. Once clients have safely transitioned home and no longer need ongoing follow-up, they are discharged from the virtual ward. Many clients continue to receive CCAC services.
- MOHLTC recently added financial incentives for primary care practices that provide comprehensive primary healthcare services to patients. Compensation is based on blended payments linked to the number of patients enrolled and includes additional financial incentives for accepting acute care and vulnerable complex patients who were previously without a family physician.[279]

3.4 Keeping people healthy in long-term care

Ontario's LTC homes care for people who have difficulty looking after themselves. These homes can provide services that help residents achieve and maintain their independence for as long as possible. For example, physiotherapists can teach staff in the homes exercises that keep residents mobile, as well as providing specialized programs as needed.[280] Occupational therapists can suggest devices and nursing interventions that assist people with everyday activities,[281] such as dressing and eating. In addition, pleasant surroundings and a variety of recreational and social activities can help prevent depression.[282]

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
LTC residents preserve their well-being and ability to function as long as they can, through activities to help preserve bladder function and physical mobility, control pain, preserve language, memory and thinking abilities, and avoid depression and weight loss.	Without bladder function and physical mobility, residents may experience loss of independence, reduced quality of life and increased risk of pressure ulcers. Without appropriate pain control and activities that are stimulating, they may endure needless suffering, be unable to participate in activities and feel social isolation. Depression and a loss of appetite can lead to decreased energy, mood and mobility, and premature death.	Ontario's 75,000 residents in the over 600 LTC homes across the province.[283]

Indicator	Value*	Bottom line
Percentage of residents with worsening† bladder control.	21%	**Ontario has just started to report these indicators so it is too early to tell if they are improving, and there are no international benchmarks available yet. Even though there is a tendency for LTC residents to decline over time, effective care can help to slow the rate of decline and research shows that there is still room for improvement in each of these areas.**
Percentage of residents with increasing† difficulty carrying out normal, everyday tasks (getting dressed, eating, personal hygiene)	33%	
Percentage of residents with pain that got worse recently†	12%	**Visit http://www.hqontario.ca/en/ltc_landing.php for more information on individual homes.**
Percentage of residents with worsening† symptoms of depression or anxiety	26%	
Percentage of residents whose language, memory and thinking abilities have decreased recently†	13%	
Percentage of residents with recent†† unintended weight loss	7.1%	

Data source:
*Continuing Care Reporting System, April 2009 to March 2010, calculated by Canadian Institute for Health Information. Under the system, every resident undergoes a detailed assessment using the Resident Assessment Instrument — Minimum Data Set (RAI-MDS) 2.0 tool of his or her health at least once every three months by a staff member at the home specially trained to collect this information. MOHLTC has implemented RAI-MDS in all LTC homes across the province. Results are based on 626 homes that have enough data to report.
†From one assessment period to the next — typically, every three months.
††A 5% loss over three months, or a 10% loss over six months.
Please see section 5.4 for root causes and ideas for improvement.

3.5 Keeping people healthy in home care

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People who have chronic conditions or complex needs and require healthcare or personal support services (such as homemaking) for 60 days or longer are referred to as long-stay home care clients.[127] As people age, it often becomes harder for them to live independently. However, home care workers can slow this process for some clients.

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
Home care clients preserve their well-being and ability to function as long as they can, through activities to preserve bladder function and mobility, control pain, preserve communication ability, memory and thinking abilities, and avoid depression and weight loss.	Without bladder function and mobility, home care clients may experience loss of independence, reduced quality of life and increased risk of pressure ulcers. Without appropriate pain control and activities that stimulate their minds, they may endure needless suffering, be unable to participate in activities and feel social isolation. Depression and a loss of appetite can lead to decreased energy, mood and mobility, and premature death.	Ontario's 185,000 clients who receive services through CCACs on any given day[128] and the over 600,000[129] clients who received home care services from CCACs in 2009. Many of these individuals are long-stay clients.

Indicator	Value*	Time trends & comparisons	Bottom line
Percentage of clients whose bladder function has recently declined or, if they had a bladder function problem, it did not improve compared to previous assessment	50%		**Half of individuals receiving home care services either failed to improve or experienced a recent decline in their bladder function compared to their previous assessment. This indicator has not improved in the last two years. There are many ideas for improving incontinence (see section 3.4); it will be important to ensure we are using all these ideas to the fullest.**
Percentage of clients with a new problem with normal, everyday tasks (getting dressed, eating, personal hygiene) or an old problem that is not getting betters	46%		**Among home care clients, close to 50% have a new problem negatively affecting their ability to carry out their activities of daily living or an older problem that has worsened since their last assessment. The issue of worsening activities of daily living has become more common in the last three years. Because a decline in one's ability to perform activities of daily living is one of the leading predictors of someone requiring institutional care, improvement in this area is crucial.**
Percentage of clients with pain that is not well controlled	24%		**Almost a quarter of home care clients experiencing pain are not having their pain well managed. This has not improved in the last three years. There is room for improvement.**
Percentage of clients with serious signs of depression (e.g., profound sadness, withdrawal from normal activities)	9.2%		**Among all home care clients, one in 10 exhibit a sad mood and at least two depressive symptoms. There has been no change in the last three years. These results are better than in several European countries (average 12%), but Finland and Sweden have the best results (2.1% and 4.1% respectively).[130] This suggests that there is still room for improvement.**
Percentage of clients who recently declined or did not improve in their language, memory and thinking abilities	51%		**Half of all people receiving home care services experienced a decline in their thinking abilities or a failure to show improvement in an existing problem over the previous six months. This problem has become more common in the past three years. Managing people with cognitive impairment will be an increasingly important issue as the population ages. There is room for improvement.**

Data source:
*Home Care Reporting System, FY 2009/10, calculated by Canadian Institute for Health Information. Under the system, every long-stay home care client undergoes a detailed assessment using the Resident Assessment Instrument — Home Care (RAI-HC) tool of his or her health at least once every six months by someone specially trained to collect this information. The following RAI-HC indicators were adjusted for various risk factors: failure to improve/incidence of bladder incontinence; failure to improve/incidence of activities of daily living (long form) impairment; prevalence of inadequate pain control among those with pain; prevalence of negative mood; failure to improve/incidence of cognitive decline; and prevalence of weight loss.

3.5

Root Cause

Issue: Bladder incontinence.

Staff lack familiarity with strategies such as prompted voiding to reduce incontinence.[284]

Residents might find it uncomfortable or unnatural to go to the bathroom on schedule.

Issue: Decline in mobility.

Residents underuse mobility aids, such as canes or walkers, even though they are known to prevent falls.[288,289] This could be due to feelings of embarrassment about using them, because they are uncomfortable, because they don't know how to use them, or because they were never offered.

Lack of exercise or rehabilitation, because services are not available, not tailored to the individual's needs or too expensive.

Issue: Pain.

Providers have difficulty recognizing pain, particularly among residents with dementia.[294,295]

Residents may be reluctant to take pain medications due to fear of addiction or tolerance or dislike of side effects (e.g., constipation).

Physicians may be reluctant to prescribe pain medications.

They may worry that residents will become addicted; this is a particular concern with narcotic agents.

Age can affect a drug's effectiveness, sensitivity and toxicity, and it may be difficult to predict optimal dosages and potential side effects.[300]

Ideas for Improvement

Staff training and standard protocols for implementing prompted voiding routines have been shown to improve continence in LTC.[285] With this approach, staff remind residents to void at certain times in the day, which helps avoid accidents. Ensure new or short-term staff are familiar with these techniques or partnered with those who are. The Registered Nurses' Association of Ontario has workshops and materials to support these strategies.[286,287]

Encourage use of mobility aids. Connect residents with others who have overcome shame of mobility aids and who now live more active lives. Ensure that users are well trained and comfortable with how to use them.

Make assessment of the need for mobility aids routine, and conduct systematic checks of mobility aids to ensure they are appropriate. The RAI-MDS 2.0 tool provides guidance on how and when to assess residents' use of mobility aids.[290,291]

Ensure residents are capable of using devices and are trained in their proper use. Some devices require the user to have appropriate cognitive function and strength to use them properly and not increase the risk of falls.

Offer a variety of different exercise or rehabilitation therapies.[292] A systematic review determined that exercise interventions reduced the risk of falls in the elderly by 14%.[293]

Use a validated pain assessment tool. Several pain assessment tools exist that are designed as checklists and that use visual cues, such as facial expressions and changes in behaviour, to recognize pain.[296,297,298] A review that rates pain recognition tools by validity, reliability and feasibility can be found here: www.biomedcentral.com/content/pdf/1471-2318-6-3.pdf. RAI-MDS 2.0 also provides for regular assessment of pain.[299]

Make the use of these pain assessment tools a part of routine assessments of residents. Train all staff in their use.

Guidelines are useful in helping staff manage persistent pain and assess responsible medication use. Develop standardized protocols for pain control, agreed to by all staff, outlining how to use short-acting and long-acting narcotics.

Maximize use of safe medications, such as acetaminophen. Consider adding non-addictive drugs for chronic pain (e.g., low-dose nortriptyline or gabapentin).[301] Also consider non-drug alternative therapies for pain control, such as acupuncture,[302] exercise or physical therapy.[303]

Consider adopting a "universal precautions" approach,[304] assessing every resident for risk factors associated with addiction using brief screening tools.[305, 306, 307] Employing these tools can increase confidence in prescribing and monitoring the use of drugs and help identify patients for whom more intensive monitoring is appropriate.

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Root Cause

Issue: Depression.

Residents experience social isolation, especially with the initial move to LTC.[108]

A decline in general health or physical or psychological capacity may make people feel depressed, especially if it limits their daily activities.[119]

Changes in the brain may make older people more vulnerable to depression.[120]

Deaths of friends or family, which become more common with age, can lead to depression.[121]

Staff may not recognize depression in older people, as it frequently differs compared to depression that occurs earlier in life, or it may be considered a "natural" part of aging.[122,123]

Ideas for Improvement

Offer a range of social activities, such as exercise classes, field trips, music and art classes, activities that provide opportunities for intergenerational mixing and pet therapy. Group activities address feelings of isolation and loneliness.[113,114] Activities are especially likely to prevent (or alleviate) depression when they engage residents' interests, rather than just occupying their time. Ensuring residents are able to choose activities is especially important.[115]

Offer counselling or antidepressant medications.[116,117,118]

Screen for signs of depression using the RAI-MDS 2.0 tool or other validated depression scales.[309,310,311,312]

Better equip staff to identify and manage depression in residents. Knowledge of the ways in which age may alter factors associated with the onset and persistence of depression is essential for effective treatment of depressed older adults.[124]

What is Ontario doing?

- The Residents First Initiative: Advancing Quality in Long-Term Care, now in its second year, supports LTC homes to use quality improvement techniques to improve the delivery of care. Approximately 75% of LTC homes are participating in the Leading Quality Program, which helps leaders incorporate quality as a core organizational strategy.[325] Roughly 20% of LTC homes are completing structured quality improvement training that focuses on improving resident care across a number of clinical areas, such as falls prevention and continence care. It is anticipated that many more homes across the province will take advantage of this training opportunity.
- MOHLTC is implementing a new inspection methodology for LTC homes. LTC homes can replicate the comprehensive Resident Quality Inspection as they work to improve resident care.[326]

4.1 Hospital infections

Infections acquired in a hospital waste healthcare resources. They also cause patients to suffer and sometimes result in death.[331] Hospitals have an obligation to do everything they can to prevent hospital-acquired infections.

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
As few hospital-acquired infections as possible.	Unless Ontario eliminates hospital-acquired infections, Ontarians will continue to bear the burden of unnecessary deaths, longer hospital stays, more hospital costs, more disability and more psychological effects.[332]	Ontario's hospital patients; each year there are nearly 1.1 million hospital discharges in Ontario.[333]
Hospitals to adopt evidence-based prevention practices, including effective hand washing and protocols to prevent surgical site infections.	Without complete adoption of effective prevention practices, Ontarians will experience more hospital-acquired infections.[334, 335]	

Indicator	Value*	Time trends & comparisons	Bottom line
Hand hygiene compliance in hospitals before patient contact			**Two in three Ontario healthcare providers wash their hands before seeing patients, while almost eight in 10 wash their hands after patient contact (data not shown). Acute teaching hospitals have a lower rate of hand hygiene compliance compared to other hospital types. There has been some improvement, but compliance is still too low. There is room for improvement.**
Overall	66%		
Acute teaching	57%		
Large community	70%		
Small community	71%		
Chronic/rehabilitation	69%		
Mental health	63%		
New hospital-acquired *C. difficile* rate per 1,000 bed days	0.30		**The C. difficile infection rate has been stable throughout 2010 at around 0.30 cases per 1,000 bed days. This corresponds to about 250 cases per month across the province. These results represent an improvement compared to late 2008, when C. difficile reporting began. Activities in Ontario which may have contributed to this decline include the creation of standard protocols[336] and infection control resource teams[337] to help hospitals deal with outbreaks. Ontario's rates compare favourably to other places,[338] but there is still room for improvement.**
New ventilator-associated pneumonia (VAP) cases per quarter	77		**The number of VAP and CLI cases has decreased steadily over the last two years. Many hospitals in Ontario have participated in the Safer Healthcare Now! campaign which supports hospitals to implement best practices for avoiding these infections,[339] and this may have contributed to the decrease. This improvement is welcome, because these infections are associated with a high mortality rate.[340, 341] However, there is still room to do better, as these infections can be eliminated altogether, and many hospitals have already done so.[342,343]**
New central line infection (CLI) cases per quarter	53		

Data source:
*MOHLTC. See also www.ontario.ca/patientsafety. Most recent values: *C. difficile*, MRSA, VRE — average over 2010; VAP, CLI, SSI – October to December 2010; hand hygiene – FY 2009/10. VRE cases include only those that result in bacteremia (infection in blood). VAP cases include only those occurring in intensive care units (ICU) after at least 48 hours of mechanical ventilation. CLI cases include only those occurring in the ICU after at least 48 hours of being placed on a central line. Hand hygiene compliance represents percent of instances where proper hand hygiene took place when it should have.

Indicator	Value*	Time trends & comparisons	Bottom line
New hospital-acquired Methicillin-resistant *Staphylococcus aureus* (MRSA bacteremia) cases per quarter New hospital-acquired Vancomycin-resistant Enterococci (VRE) bacteremia cases per quarter	53 6		**In the year 2010, there were 210 cases of MRSA bacteremia and fewer than 24 cases of VRE bacteremia reported in hospitals across Ontario. MRSA infections have not changed in the last two years, but VRE cases have decreased compared to 2009. Continued vigilance with hand washing and infection control practices is needed to ensure these rates do not increase.**
Percentage of hip and knee replacement surgeries where antibiotics were given at the right time to prevent surgical site infection	97%		**The use of the right antibiotics at the right time for hip and knee surgery has increased from 85% to 97% over the past two years. Many hospitals have achieved 100% by using standard protocols before surgery.[344] All hospitals should implement standard protocols and ensure that antibiotics are given at the right time for other types of surgery.**

Data source:
*MOHLTC. See also www.ontario.ca/patientsafety. Most recent values: *C. difficile*, MRSA, VRE — average over 2010; VAP, CLI, SSI — October to December 2010; hand hygiene — FY 2009/10. VRE cases include only those that result in bacteremia (infection in blood); VAP cases include only those occurring in intensive care units (ICU) after at least 48 hours of mechanical ventilation; CLI cases include only those occurring in the ICU after at least 48 hours of being placed on a central line. Hand hygiene compliance represents percent of instances where proper hand hygiene took place when it should have.

4.1

Root Cause

Lack of urgency or sense of importance in tackling hospital infections within the organization or staff.

Providers may forget to follow all recommended procedures for infection control.

Lack of experience.

Providers are unaware of how poorly they are following infection control guidelines.

Providers may be reluctant to follow infection control guidelines if they are skeptical of the evidence or don't think it is a problem for them.

Ideas for improvement

Exert strong leadership to develop of a culture of safety. This may include any of the following:

- Leaders can deliver frequent messages to staff about the importance of safety and the organization's commitment to improve. Delivering these messages in person (e.g. through walkarounds with staff)[345] can be more powerful than by print.
- Leaders can also reinforce the message about the importance of reporting safety incidents or deficiencies, and that staff will be supported rather than punished when they do so.
- Offer rewards or recognition to units or programs for achieving infection control benchmarks. Promote those successful at improving safety to prominent positions.
- Leaders can use regular safety culture surveys of employees to monitor how strong the safety culture is within the organization.[346]

Use checklists and flow sheets to prompt action. For ventilator-associated pneumonia, use checklists to remind everyone to keep the head of the bed at 45 degrees, try daily sedation breaks, and enact other best practices.[347, 348] For surgical site infection prevention, checklists before surgery can ensure the right antibiotics are given at the right time.[349, 350] Give cleaning staff a checklist of items that require daily cleaning or cleaning at discharge.[351]

The Keystone ICU project in Michigan implemented a five-step checklist to reduce catheter-related bloodstream infections, which helped decrease the infection rate from 2.7 infections per 1,000 catheter days to zero.[352]

Ensure that only those trained to do intensive care medicine work in ICUs.[353, 354, 355]

Ensure that all new or temporary staff are oriented to infection control procedures. Develop a process to verify their skills or compliance with protocols early in their time with the organization.

Regularly monitor compliance with protocols and report on performance.[356, 357] Although the province mandates public reporting on many key measures, leaders can consider posting this information within the hospital more prominently, or breaking down statistics by individual department[358] or type of provider (e.g. hand hygiene compliance among physicians, nurses, etc.). While some measures such as C. difficile must be collected monthly, hand hygiene reporting is mandated in Ontario only once a year. Hospitals that are aiming for faster improvement may consider collecting and reporting this data to staff much more frequently.

Explore strategies for healthcare provider buy-in. Identify leaders or champions[359] in different professions in the hospital (e.g., doctors, nurses, administrators) to work with those refusing to comply.

Review clinical evidence. Look at the hospital's infection statistics and make the case for change. Use existing evidence-based tools[360] and work with all providers' ideas to make the process as efficient as possible. Work with administration and the hospital board to revoke privileges for staff and professionals who refuse to practice at the standard of care.[361]

Root Cause	Ideas for improvement
Issue: Poor compliance with hand hygiene protocols.	
No clear accountability to the patient.	**Encourage patients and families to take a more active role in hand hygiene promotion.** Create tools (e.g., brochures, posters, videos, buttons) that educate them on when, why and where hand hygiene tasks should be performed and give them explicit permission to ask or remind healthcare providers to follow hand hygiene protocol.[362, 363]
Healthcare providers may feel that they don't have time to wash their hands.[364]	**Work hand washing into routines**, such as washing hands when first meeting patients.
Hand hygiene stations are not conveniently located.	**Put hand washing stations in convenient areas,**[365] such as in patient rooms, at the entrance to rooms, at the entrance to wards and by elevator doors. Provide alcohol-based hand rub at patient bedsides. Regularly inspect stations to ensure they are not empty.
Hand washing solution and alcohol-based gels may irritate skin and cause chapped hands.[366]	**Provide soaps or hand sanitizer products that have moisturizers.**[367]

What is Ontario doing?

- Hospitals are required to immediately report *C. difficile* outbreaks to their local public health units. This gives medical officers of health the information they need to monitor and respond to emergent outbreaks. Infection control resource teams are available to help hospitals respond to outbreaks.[368]
- The hand hygiene program for Ontario hospitals — Just Clean Your Hands — was launched in March 2008. Hospitals are required to publicly report hand hygiene compliance among healthcare workers.
- There are 14 Regional Infection Control Networks (RICNs) across the province that promote the best approaches to infection prevention and control.[369]
- Since 2008, Ontario has promoted public reporting of hospital-acquired infection indicators by individual hospital.[370]
- Three Ontario hospitals are participating in the Canadian Positive Deviance project as pilot sites.[371] This approach identifies individuals who follow a beneficial practice when most others do not, uncovers the secret behind their behaviour and aims to spread it to others.

4.2 Adverse events in acute care hospitals

When a patient experiences an unintended, undesirable change in health caused by healthcare services, it is described as an adverse event.[372, 373] According to a Canadian study, 37% of adverse events are preventable, often because they are due to medical error.[374] Examples of medical errors include forgetting to give a drug or treatment, giving the wrong treatment, doing a procedure with improper technique, not recognizing a warning sign early or making the wrong diagnosis.[375, 376]

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
Surgery patients experiencing as few pulmonary embolisms (blood clots in the lung) or deep vein thrombosis (DVT; blood clots in the leg) as possible, through the use of blood thinners and encouraging people to be up and about where possible.[377]	Blood clots in the legs can break off and end up in the lungs, leading to a pulmonary embolism. The chance of death is 5% from DVT and 33% from pulmonary embolism.[378] Pulmonary embolism is the most common preventable cause of hospital death,[379] and DVT can lead to long-term problems with blood circulation in the leg.[380] DVT and pulmonary embolism also increase hospital costs.[381]	Ontario's surgery patients; in FY 2009/10, there were 1,207,000 day surgeries[382] and 285,000 acute in-patient surgical discharges[383] in Ontario.
Use of best practices like the surgical checklist, to ensure 26 key tasks are always carried out by operating room teams.	Use of the surgical checklist has been shown to reduce deaths and complications following surgery.[384]	
No "never events", such as surgery on the wrong site or wrong patient,[385] which are clearly due to a failure to follow standard procedures. This report examines one type of never event: a foreign object left inside the patient after a procedure.	Never events have devastating consequences for patients. In the case of retained foreign objects, they include infections, pain, unnecessary repeat surgery or death. Reactions to these events from patients, families and the community include anger and loss of trust. Hospitals pay for both the costs of additional care and potential lawsuits. Hospital staff may suffer terrible guilt from these events.	Ontario's hospital patients who account for more than 1.1 million hospital discharges each year.[386]
All hospital patients avoiding harm from their medical care. Specific examples include falls, pressure ulcers, bladder infections and pneumonia – events that occur less frequently when the right level of nursing care is provided.[387]	Adverse events can cause pain and suffering, unintended injuries, disability, longer stay in hospital and increased risk of death.[388, 389, 390]	

Indicator	Value	Time trends & comparisons	Bottom line
Adjusted rate of in-hospital pulmonary embolism and DVT per 100 surgical procedures: — DVT — Pulmonary embolism — Sum of DVT and pulmonary embolism	0.20* 0.32* 0.52*		**Following a surgical procedure, one in 200 patients develop a serious blood clot. In the past two years, these rates have not improved, and in fact the rate of pulmonary embolism has increased. This may reflect improved reporting and focus on this issue. There is room for improvement.**
Percent of surgeries in which a surgical safety checklist was performed	98%**		**Use of the surgical checklist is now just under 100%, which is welcome news. It will be important to monitor its impact in reducing deaths and complications in the near future.**
Rates of adverse events per 1,000 medical/surgical patients in hospital: — Pressure ulcer — Fracture — Urinary tract infection — Pneumonia	2.1*** 0.8 15 10		**Over the past two years, rates of these adverse events have either increased or remained stable. This increase may be a result of increased reporting of these events. There is room for improvement.**
Cases per 100,000 procedures where a foreign object was left in the patient	9.9***		**In about one in ten thousand procedures in Ontario, a foreign object was left in the patient. This rate has increased in recent years, although this could be due to increased reporting of these events. Although these instances are rare, they can cause serious harm and should never happen.**

Data sources: *Discharge Abstract Database (DAD), FY 2009/10, calculated by Institute for Clinical Evaluative Sciences. **Web-enabled Reporting System (WERS) or Surgical Efficiency Target Program (SETp), hospital self-reported data, July to December 2010, provided by MOHLTC. ***DAD, FY 2009/10, provided by the Canadian Institute for Health Information (CIHI), FY 2009/10.

Root Cause

Healthcare providers may not follow best practices because they are busy, distracted by other patient issues or there are too many things to remember.

Providers are unaware of how significant a problem adverse events are.

Healthcare providers make judgment errors because of fatigue.[400]

Staff have too little time to do all recommended procedures.

Ideas for Improvement

Use standardized admission orders, checklists, order sets or decision support tools.[391] Examples include:

- Standard risk scoring sheets to identify people at high risk for venous thromboembolism[392, 393] falls or ulcers[394];
- Checklists to remind staff to follow recommended practices for falls prevention for those at high risk[395] (e.g. keep bed low, make call bell or commode easily accessible, provide no-slip footwear, check for clutter, arrange for physiotherapy or assistive devices for walking; see sections 4.5 and 4.6);
- Checklists of best practices for pressure ulcer prevention (e.g., special mattresses or padding, turning immobile patients regularly, placing labels in chart or by bed to remind staff who is at high risk of an ulcer);[396, 397]
- Visual reminders and cues to help staff spot any evidence of new pressure ulcers in patients on their unit.[398] (See section 4.5.)

Routine performance monitoring and feedback.[399] Feed back data to surgeons on their rate of pulmonary embolism and DVT or compliance with the use of blood thinners. Regularly feed back data to nurses on nursing-sensitive adverse events.

Set limits on on-call hours. Hospitals can set policies to limit the consecutive hours on call or require rest time after being on call.

Focus on healthcare provider wellness.[401] This includes ensuring providers have proper nutrition and hydration throughout their shifts.[402]

Increase available staff time. Many adverse events have been shown to occur more frequently when there are fewer nurses available.[403] Although increasing nursing staff time at the bedside can be achieved by adding more nurses, it is also important to first consider how the same staff could do more bedside care by eliminating unnecessary tasks or streamlining their work.[404] Programs such as "Releasing Time to Care" in the UK have redirected 18% of nurses' time away from administrative or non-clinical tasks back to direct patient care in selected pilot sites.[405]

What is Ontario doing?

- The *Excellent Care for All Act*, enacted in June 2010, requires hospital boards to make certain that the administrator establishes a system that ensures a disclosed incident is analyzed and a plan is developed with systematic steps to avoid/reduce the risk of further similar incidents.[406]

4.3 Mortality in hospitals

Hospitals try to provide patients with timely service, a positive experience and recovery from their medical condition — but most critical of all is their ability to save lives. Despite complex, challenging situations, hospitals must apply appropriate treatments and avoid medical errors that can lead to needless deaths. There are two main ways to measure mortality: the hospital standardized mortality ratio (HSMR†), which compares how many deaths occurred to what might be expected given the types of cases the hospital sees, and mortality rates for specific medical conditions.

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
Mortality rates for hospital patients that are as low as possible for: • Heart attacks • Surgery and procedures such as coronary artery bypass grafts and percutaneous coronary interventions ; and, • Other common conditions, including congestive heart failure, pneumonia, chronic obstructive pulmonary disorder (COPD), septicaemia, lung cancer, stroke, respiratory failure and hip fracture. Ontarians want hospitals to do everything possible to prevent deaths, including: • Ensure patients get the right drugs, tests and treatments; • Follow hand washing routines, protocols to prevent surgical site infection[407] and blood clots,[408] and use surgical checklists[409]; • Do complicated procedures only if they have an abundance of experience; • Not delay time-sensitive treatments, such as clot-busters for heart attack and stroke[410] and antibiotics for serious infections; and, • Implement information technology systems and medication reconciliation to prevent drug errors.[411]	Higher mortality rates are clearly undesirable.	Ontario's hospital patients who account for more than 1.1 million hospital discharges each year.[412]

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of reportable hospitals whose HSMR has decreased compared to the previous year	69%*		**Last year, almost seven out of 10 reportable hospitals experienced a decrease in their HSMR score. There have been substantial improvements within the last four years; however, there may still be room to improve.**
Adjusted in-hospital rate of death within 30 days per 100 patients admitted for stroke	16*		**About one in six stroke patients die within 30 days of a stroke. There has been minor improvement over the past four years. This implementation of the Ontario Stroke Strategy (see next page) may have contributed to this trend.[413] There is still room to improve.**
Adjusted rate of death within 30 days per 100 patients admitted for heart attack	9.6**		**One in 10 patients die within a month of having a heart attack. Continuous decline in mortality in the past six years may be due to newer treatments (e.g., bypass or stents following a heart attack) and increased use of life-saving drugs such as statins (see section 3.1).**
Adjusted rate of death within 30 days per 100 — coronary artery bypass grafts — percutaneous coronary interventions	2.1** 0.78**		**Approximately one in 50 people die after having a coronary artery bypass graft one in 135 people die after having a percutaneous coronary intervention. The mortality rates for these services were higher in 2008/09 than in previous years, although it is possible that this increase could be due to more high risk patients undergoing and benefitting from these procedures.[††] It will be important to further investigate causes for this recent increase and ensure recommended guidelines are followed.**

Data sources: *Canadian Institute for Health Information, FY 2009/10.
**Discharge Abstract Database, Registered Persons Database, FY 2008/09, calculated by Institute for Clinical Evaluative Sciences.
† The HSMR is the ratio of **actual** (observed) deaths to **expected** deaths. It focuses on the diagnosis groups that account for the majority of in-hospital deaths. Using a logistic regression model, it is adjusted for several factors that affect in-hospital mortality, including age, sex, length of stay, admission category, diagnosis group, co-morbidity and transfer from another acute care institution. An HSMR of 100 suggests that a hospital's mortality rate is the same as the national average, given the types of patients cared for. An HSMR greater or less than 100 suggests that a local mortality rate is higher or lower, respectively, than the national experience. See secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=hsmr_results_home_e.
†† This indicator has been case-mix-adjusted for factors including age, gender and existence of certain conditions (e.g. diabetes, congestive heart failure, past heart attack or kidney failure), but not for factors such as the urgency of the surgery. Future versions of this indicator will aim to include this information.

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See sections 3.1, 4.1 and 4.2 for specific change ideas related to heart attack, stroke, congestive heart failure, hospital infections and pulmonary embolism that could affect mortality.

Root Cause

Healthcare providers may find it difficult to consistently follow all life-saving best practices. This could be because they are busy or overwhelmed with too much information and forget, or are not aware of the latest evidence.

Facilities and providers may be inexperienced at handling certain conditions. Mortality rates are lower for esophageal, pancreatic and liver cancer surgery,[419] cardiac surgery,[420] pulmonary embolism,[421] abdominal aneurysm repair[422] and carotid endarterectomy[423] when done by doctors and in hospitals that perform more surgeries.[424]

Delivery of time-sensitive care is delayed. It is important for heart attack patients to get thrombolysis or surgery quickly,[432] for stroke patients to get thrombolysis[433] and for pneumonia patients to get antibiotics as soon as possible.

Failure to rescue. Warning signs of rapid deterioration might not be recognized because the diagnostic cues are subtle and unrelated,[435] or they may not be acted on quickly because of poor communication, shift changes or being too busy or distracted.

Ideas for improvement

Increase the use of standardized admission orders, discharge checklists, order sets and decision support tools.[414] In addition to the tools mentioned in sections 4.1 and 4.2 (e.g. checklists for surgery, falls, ulcers, deep vein thrombosis), hospitals can use "care bundles," or checklists of accepted clinical guidelines printed on forms that are made conveniently available to clinicians. Hospitals in the UK have used these bundles for stroke, congestive heart failure and chronic obstructive pulmonary disease to reduce mortality.[415] Different bundles for sepsis exist, and their use is associated with a doubling of the odds of survival.[416, 417] The Canadian Patient Safety Institute and the Safer Healthcare Now! Initiative[418] promotes Canadian care bundles that cover topics such as ventilator-associated pneumonia, central line infections and medication reconciliation.

Create dedicated centres of excellence. Canadian stroke guidelines recommend that patients be sent to designated stroke centres whenever possible,[425] as such centres have better outcomes.[426] Ontario's stroke system follows this model (see below). This principle can be followed for other diagnoses.

Consider performing high-risk surgeries only in facilities that maintain a "threshold volume" of cases,[427, 428, 429, 430] and where only surgeons with a minimum volume per year do the surgery. Currently, in cardiac care, there are minimum standards for facilities that are being followed. Cancer Care Ontario has released a minimum volume standard for hepatic-pancreatic-biliary tract surgery to improve outcomes for cancer surgery patients. These standards include minimum volumes of surgeries, a minimum number of surgeons and a minimum of necessary physical resources and human resources that must be available.[431]

Develop standardized processes or put clinical pathways in place. Improve emergency department triage processes.[434] Identify in advance who does what, when and in what order. For example, at the Windsor Essex District Stroke Centre, there is an acute stroke protocol facilitating thrombolysis, an acute stroke clinical pathway and order set supporting current best practice, multidisciplinary stroke care, a neurology unit providing high-level multidisciplinary expert care, onsite CT, MRI, interventional radiological, neurosurgical and vascular surgery services, and an acute stroke resource nurse who provides case management, as well as professional and patient education.

Consider the use of rapid response teams,[436] with clear guidelines for when they are to be used. Rapid response teams are clinical teams with critical care expertise who can be called at a moment's notice by anyone to assess and stabilize a patient whose condition is deteriorating.[437, 438]

Consider addressing critical reasoning skills[439] and teaching communication techniques, such as "situation-background-assessment-recommendation," which can help nursing staff accurately describe the critical nature of a situation to a physician or nurse practitioner.[440] Also consider teaching the critical language approach of "concerned-uncomfortable-unsafe-scared," which helps providers raise issues related to patient safety.[441]

What is Ontario doing?

- Safer Healthcare Now! is a national grassroots campaign aimed at reducing adverse events that cause harm or death. In Ontario, over 500 healthcare teams from 161 organizations have enrolled, representing almost half of all teams enrolled across the country. The greatest uptake is with medication reconciliation in acute care (162 teams) and surgical site infection prevention (159 teams).[442] Other teams are working on reducing hospital acquired infections, creating rapid response teams, preventing blood clots, reducing falls and optimizing care for heart attacks.
- Ontario's stroke system has nine regional and 18 district stroke centres, each with expertise and resources to give specialized stroke care.[443] Ambulances bypass other hospitals to go directly to these centres.

4.4 Drug safety in long-term care

Medications, which can save lives and improve quality of life, may have side effects. Those side effects may be more severe for elderly people, who often have more complex medical problems that interact with the drugs.[444] This makes drug safety a very important issue in long-term care (LTC) homes. Many adverse drug events can be prevented[445] — for example, by steering clear of drugs known to be dangerous for the elderly,[446] by avoiding confusion on which drugs or doses a resident should be taking and by monitoring those drugs once a resident is receiving appropriate therapies.[447]

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
Medications with serious side effects for the elderly are avoided when there are safer alternatives available. LTC staff can consult the "Beers" list of drugs to avoid[448] and the Agency for Healthcare Research and Quality (AHRQ) "never prescribe" list of drugs.[449]	Medications on the Beers and AHRQ lists may increase the risk of falls and cause dizziness, confusion or death. They may also lead to irritating side effects, such as dry mouth.	Ontario's 75,000 residents in 626 LTC homes across the province.[450]
Prescriptions to LTC residents for antipsychotic or anti-anxiety drugs are avoided unless there is a specific reason.	Antipsychotic and anti-anxiety drugs may increase the risk of falls[451] and cause dizziness, confusion, stroke or death.[452]	

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of elderly LTC residents prescribed the following: — A drug that should be avoided for the elderly (Beers list) — A drug that should never be given to the elderly (AHRQ list)	19%* 0%		**About one in five LTC residents in Ontario is prescribed a drug that should be avoided in the elderly. The use of these drugs has gradually decreased over the last seven years, but there is likely still room for improvement. The good news is that the use of drugs that should never be given in this population remains at 0%.**
Percentage of new LTC home residents (aged 66 and above) newly started on certain drugs where there was no clear reason to use them: — Antipsychotics — Benzodiazepines	14%** 24%		**Shortly after entering an LTC home, one in six residents are given an antipsychotic drug that they were not receiving before (i.e., the LTC home physician and not the previous family doctor started the drug). One in four of these new residents are prescribed a drug for anxiety or sleep that they were not receiving before. Over the past three years, there has been no change in the prescribing of new antipsychotics, and only a very slight decrease in the use of new benzodiazepines. Although there is no target for how low the use of these drugs should be, there is likely major room for improvement.**

Data sources:
*Registered Persons Database (RPD), Ontario Drug Benefits Database (ODBD), Ontario Health Insurance Plan (OHIP) Claims Database, Discharge Abstract Database (DAD), FY 2009/10, calculated by Institute for Clinical Evaluative Sciences (ICES).
**RPD, ODBD, OHIP Claims Database, DAD, Client Profile Database, FY 2009/10, calculated by ICES.

Root Cause

Inappropriate resident behaviours, such as aggressiveness, lead to the prescription of antipsychotics or sedative-hypnotic drugs.

Difficulty stopping drugs that patients have been on for years, because of an addiction or tolerance to the drug. Withdrawal symptoms like insomnia or headaches might appear when a drug is stopped.[456]

Some LTC homes may have an internal norm where heavy drug prescribing is viewed as standard care. In one American study, residents entering a LTC home that already had high prescribing rates for anti-psychotics were more likely to be put on one without a clear indication.[460]

Physicians may be ordering high risk drugs because they are **unaware of the risks or available alternatives, or are sceptical about the evidence** that they can cause harm.

Feelings of loneliness, loss of autonomy or lack of purpose may lead to anxiety or difficult behaviour.

Staff feel they do not have enough time to provide face-to-face care that would allow them to help residents address underlying issues behind anxiety or difficult behaviour.

Residents entering a LTC home for the first time may face a difficult adjustment period. Unfamiliar surroundings, different routines and new people can worsen confusion or generate anxiety, insomnia, or fear and aggressiveness. These symptoms, in turn, may lead to greater use of antipsychotics or anti-anxiety drugs.

Ideas for improvement

Encourage non-drug approaches to managing inappropriate behaviour.[453] These include conflict de-escalation and good communication techniques, such as making good eye contact, using simple sentences and one-step instructions, and avoiding making the resident feel rushed.[454] Cognitive-behavioural therapy may be helpful for certain types of elderly persons[455], to address the underlying cause of anxiety.

Look to the Resident Assessment Protocol in the RAI-MDS 2.0 assessment tool, which is designed to guide care planning for a resident exhibiting aggressive behaviour.

Gradually wean residents off these drugs over a period of several weeks. Standard protocols[457] could help providers accomplish this.

Switch to safer drugs. For example, some antidepressants are preferable to sedative-hypnotics for anxiety.[458]

Consider treatments for withdrawal side effects, such as carbamazepine for benzodiazepine withdrawal,[459] if slow tapering proves to be difficult.

Public reporting of the use of these drugs by individual long-term care home can help motivate homes with unusually high rates of prescribing to address the problem.

Provide **anonymous feedback to individual physicians** within a LTC home on their rates of use of high risk medications, for their own improvement purposes.

Remove the most dangerous drugs from the formulary of LTC homes.

Implement a well-designed electronic medical record (EMR), which can provide warnings about potentially harmful prescriptions.[461] **Use computerized physician order entry (CPOE) with clinical decision support.**[462] When a particular drug is selected, these systems can ask the prescriber if a checklist of other strategies have been tried first.[463] **Consider academic detailing programs,** where specially trained individuals (typically pharmacists or nurses) visit practitioners to promote evidence-based drug prescribing practices. These have been successful at changing prescribing practices.[464, 465] Unlike drug companies, their information is unbiased.

Conduct regular **medication reviews.** While Ontario's LTC homes are already required to do so,[466] these reviews could be strengthened by having pharmacists use checklists or appropriateness criteria, or having an interdisciplinary team review drugs.[467, 468]

Offer a range of social and recreational activities to residents to address feelings of isolation and loneliness[469, 470] and prevent or alleviate depression.[471] (See section 3.4.)

Help staff spend more time in direct contact with residents. The Releasing Time to Care program guides clinical teams as they identify and streamline processes in order to free up staff time for activities that add value for residents.[472]

Consider improvements to orientation programs for new residents. This may include more intensive time spent up front getting to know residents and families and understanding their concerns, or better communication between staff in LTC and health care workers looked after the resident while he or she was still in the community to understand his or her medical and psychosocial needs.

What is Ontario doing?

- The Institute for Safe Medication Practice (ISMP) works with MOHLTC and other agencies to provide tools and support for medication reconciliation, optimize the use of medication incident report information, develop medication safety indicators, and implement the Medication Safety Self-Assessment program.[473]
- Ontario is expanding its MedsCheck program, which offers Ontarians one-on-one consultations with their local pharmacist to ensure that they are using medications safely and effectively. Three new services are now available: MedsCheck for Diabetes, MedsCheck LTC and MedsCheck at Home.[474]
- Ontario Regulation 79/10 of the *LTC Home Act* was introduced in March 2010, which requires homes to document medication incidents, disclose them to residents, and review these incidents regularly with a view to preventing them in the future.[475]

4.5 Avoiding harm in long-term care

Individuals who move to a LTC home typically are unable to live independently and need supportive care.[477] Physical disabilities and a loss of cognitive functioning (memory, language and thinking abilities) may also contribute to their responding to situations with fear and aggression, or wandering and sleeplessness. These factors put residents at high risk of unintended harm. Healthcare providers need to do everything they can to minimize the risk of harm to residents and those who provide care.

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
Avoid falls.	Falls may lead to injuries, fractures or death. They can also increase the number of emergency department visits and hospitalizations.[478]	Ontario's 75,000 residents in 626 LTC homes across the province.[479]
Avoid new pressure ulcers.	Pressure ulcers may lead to pain and suffering, worsening infection, risk of amputation or death.[480]	
Avoid physical restraints.	Physical restraints may lead to a loss of control and depression. Paradoxically, they can also increase the risk of falls, and the restraint itself may be a safety hazard (e.g., causing asphyxiation).[481]	
Avoid worsening behaviour (e.g., aggression or wandering).	Worsening behaviour may cause physical or psychological harm to the resident, other residents and staff.	
Avoid bladder infections.	Bladder infections may lead to more serious infections or delirium.[482]	

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of LTC residents with a new† pressure ulcer (stage 2 or higher)	2.7%*		**One in 36 residents will develop a new, serious pressure ulcer over a period of three months; that's about one in nine residents each year. There is major room for improvement in this indicator. Ontario can strive to achieve a value closer to zero.**
Percentage of LTC residents whose behaviour has recently† worsened	14%*		**HQO has just started reporting these indicators and there are no international benchmarks available yet; however, there is very likely room for improvement. Visit www.ohqc.ca/en/ltc_landing.php for more information.**
Percentage of LTC residents with a recent† bladder infection	5.4%*		
Percentage of LTC residents who were physically restrained	17%*		**Almost one in six LTC residents were physically restrained in the previous three months. Many LTC homes are adopting zero-restraint policies, and some countries have rates lower than Ontario's (e.g. USA, 8%; Switzerland, 6%).[483] Although these comparisons should be interpreted with caution because of different definitions of a restraint, it is reasonable to conclude that there is room for major improvement.**
Percentage of LTC residents who had a fall in the last 30 days	14%*		**Falls are common; one in seven LTC residents had a fall in the past month. In recent years, there has been no major change in the rate of emergency department visits or hospitalizations as a result of falls. Substantial variation in the rate of falls across LTC homes in Ontario suggests there is likely room for improvement. Visit www.ohqc.ca/en/ltc_landing.php for more information.**
Rate of falls among LTC senior residents (aged 65+) per 100 resident years resulting in:			
— Emergency department visit with fracture	1.8**		
— Emergency department visit without fracture	8.8		
— Hospitalization	3.0		

Data sources:
*Resident Assessment Instrument — Minimum Data Set (RAI-MDS), FY 2009/10, calculated by Canadian Institute for Health Information. Under the system, every resident undergoes a detailed assessment of their health at least once every three months by a staff member at the home specially trained to collect this information.
**Registered Persons Database, Ontario Health Insurance Plan Claims Database, Discharge Abstract Database, National Ambulatory Care Reporting System Database, FY 2009/10, calculated by Institute for Clinical Evaluative Sciences.
† From one assessment period to the next, typically, every three months.

4.6 Avoiding harm in home care

People with chronic conditions or complex needs who need healthcare services (such as nursing or rehabilitation) or personal support services over a long period of time may become long-stay home care clients. These individuals often have physical disabilities that make them more likely to fall, injure themselves, develop skin ulcers and experience other problems. Home care workers have an important role to play in reducing the risk of harm.

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What do Ontarians want?	What if it doesn't happen?	Who benefits most?
Avoid falls or other injuries.	Falls and other injuries carry with them the risk of temporary or permanent disability, or death. They may also lead to more emergency department visits and hospitalizations.	Ontario's 185,000 residents who receive services through CCACs on any given day and the 603,535[5][8] residents who received home care services from CCACs in 2009. Many of these individuals are long-stay clients.
Avoid skin ulcers.	Skin ulcers may lead to pain and suffering, worsening infection, risk of amputation or death. They can also cause avoidable healthcare costs.	
Avoid neglect or abuse.	Neglect or abuse may cause worsening physical or psychological health.	
Avoid delirium (sudden confusion or decreased alertness).	Delirium may increase the risk of injury and/or rapid deterioration resulting in hospitalization or death.	

Indicator	Value*	Time trends & comparisons	Bottom line
Percentage of home care clients who report that they have fallen in the last 90 days	25%		**One in four home care clients report falling in the last 90 days. There has been no major improvement in the past three years. There is room to improve.**
Percentage of home care clients with a new pressure ulcer (stage 2 to 4)	1.6%		**Among long-stay home care clients, 1.6% have developed a new pressure ulcer (stage 2 to 4) identified over the previous six months. There has been no improvement in the past three years. There is likely room to improve.**
Percentage of home care clients with unexplained injuries, burns or fractures	12%		**Approximately one in 15 home care clients report unexplained injuries assessed over the past 90 days. There have been modest improvements in the past three years. These events tend to be unreported or undisclosed, so when they are reported it is important to pay special attention to these cases. There is still room to improve.**
Percentage of home care clients showing signs of neglect or abuse	1.2%*		**Among all home care clients, 1.2% showed signs of neglect or abuse. There has been no change in the last three years. These events also tend to be underreported, so when they are reported it is critical to pay special attention to these cases. There is room for improvement.**

Data source:
*Resident Assessment Instrument — Home Care, FY 2009/10, calculated by Canadian Institute for Health Information. Under this system, every long-stay home care client is supposed to undergo a detailed assessment of his or her health at least once every six months by someone specially trained to collect this information. Home care clients noted above are long-stay clients.

4.5 & 4.6

Root Cause

Residents at high risk of adverse events are not identified early. Early identification can ensure that those at highest risk get more vigilant care.

Staff may be **unaware of the extent of the problem.**

Staff may **forget to carry out all best practices** because they feel overwhelmed with information or distracted by other tasks.

Lack of skills, training or experience. Being able to identify early signs of ulcers, or knowing how to move a frail resident without shearing the skin, are examples of tasks that require training.

Staff may feel they have **not enough time** to complete all best practices.

Lack of certain equipment. Pressure relieving mattresses can prevent ulcers. High-low beds that can drop to a low height can reduce injuries from falls.

Issue: Use of restraints.

Family or staff are concerned that residents will wander if not restrained.

Issue: Falls.

A medical condition leads to frequent falls that are extremely difficult to avoid.

Medication side effects, such as confusion and dizziness, can lead to falls. Age can affect a drug's effectiveness, sensitivity and toxicity, and it may be difficult to predict potential side effects.[492] (See section 4.4.)

Residents have difficulty moving around. This increases the chance of falls.

Residents fall when rushing to get to the toilet.

Ideas for improvement

Conduct risk assessments. These are typically done at admission to an LTC home but it is important to keep these up to date. Examples include the Braden Scale and the Pressure Ulcer Risk Scale (PURS)[484] embedded in the RAI-MDS dataset now used by all LTC homes. For falls, many risk assessment tools exist,[485] and RAI-MDS also generates Resident Assessment Protocols that can serve as risk assessments.[486]

Provide real-time feedback to providers. Ontario is already moving towards public reporting of falls and pressure ulcers by individual LTC home. Administrators can go further and post this information by individual unit within their homes.

Increase the use of **checklists, reminders, standard orders or decision tools.** For example, the "turn clock tool" posted on a resident's door reminds staff of which position a resident should be in at certain times of the day.[487]

Provide appropriate training. Consider **mentorship** models, where inexperienced staff are paired with experienced ones. **Verify proper technique by direct observation of staff.** This may be particularly important for new or temporary staff.

Eliminate other activities that waste time, such as duplicate documentation, so staff can spend more time on care at the bedside.[488] The Releasing Time to Care program, developed in the UK, guides clinical teams as they identify and streamline processes in order to free up staff time for activities that add value for residents.[489]

Develop the business case to show that these investments pay for themselves in the long run.

Provide education about the hazards of restraints. Restraints can increase the risk of falls, pressure ulcers and asphyxiation, worsen an injury if a fall occurs and worsen depression.[490]

Use alternatives to track when a potential wanderer gets up, such as bed or door alarms to signal when someone leaves unexpectedly.

Try using special equipment that protects the resident from harm from a fall, such as hip protectors, helmets, non-slip footwear, keeping the height of the bed low and having padding on the floor next to the bed in case the resident falls when getting in or out of bed.[491]

Avoid certain medications. Avoid drugs on the "Beers" list[493, 494] and use safer substitutes. Have a medication review done to check for drug interactions (see section 4.4).

Use a well-designed EMR to track medication use and reduce the use of psychoactive drugs that can contribute to falls.[495]

Introduce mobility aids. Residents should be fitted appropriately for aids such as canes, walkers and scooters.[496, 497] Trial equipment should also be available for residents to test before investing in an aid. Consider ways to make their use fashionable, especially for those who may feel shame at having to use them.

Consider physiotherapy and rehabilitation. Exercise programs and Tai Chi are also effective in reducing falls.[498]

Consider using prompted voiding techniques where residents to go the washroom on a schedule and avoid incontinence (see section 3.4).

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What is Ontario doing?

- The Residents First initiative supports LTC homes to reduce harm to their residents and improve their lived experiences through the implementation of best practices and use of quality improvement tools. Topics of focus to date have included reducing falls and pressure ulcers, and changing processes which waste staff time so that staff can provide more face-to-face care for the resident. The initiative is now in its second year. Almost every Ontario LTC home is participating in the Leading Quality Program, which provides leaders with skills and tools that help them incorporate quality improvement as a core organizational strategy.[504]
- A new inspection method, Resident Quality Inspection, is being implemented in Ontario's LTC homes. It includes interviews with up to 40 residents in every home and screening to understand where more in-depth inspections are required. LTC homes themselves can replicate this comprehensive assessment as they work to improve resident care.[505]
- The North Simcoe Muskoka LHIN is implementing a LHIN-wide wound care project to reduce the prevalence of pressure ulcers in LTC, acute care and home care.[506] The LHIN is also partnering with Alzheimer Society of Ontario and the Alzheimer Knowledge Exchange on the Behavioural Support System project, which seeks to improve care for older adults with complex and responsive behaviours associated with cognitive impairments.[507]
- The Integrated Client Care Project introduces new models of integrated care to support people with complex clinical and psycho-social needs who require prolonged help to live in the community. The model of integrated home care delivery partners and aligns with other sectors to integrate care across the healthcare continuum. In 2010, four CCACs launched early implementation sites focusing on wound care, with the aim of improving client outcomes and increasing value for the healthcare system.[512]
- In 2008, MOHLTC announced the Strengthening Home Care Services in Ontario strategy, which consists of four key deliverables: improving accountability for the provision of quality home care services through public reporting on quality measures; delivering improved health outcomes for Ontarians through the Integrated Client Care Project (see above); enhancing fairness, transparency and communication in the competitive procurement process; and promoting innovation and flexibility in service provision.[513]

5.1 Patient experience in acute care hospitals and emergency departments

In 2009 in Ontario, hospitals discharged nearly 1.1 million people from acute care beds and emergency departments (EDs) handled 5.4 million visits.[514] Looking at both hospital and ED stays from the patient's perspective can help to identify strengths and areas for improvement in the healthcare system.

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
An overall positive experience for patients in hospitals and EDs.	When the care experience is not good, that fundamentally means the health care system is not meeting the public's expectations. That erodes public confidence in the health care system and can decrease staff morale.[515] Also, people with bad past experiences with care may hesitate to seek care when they need it.[516]	All Ontarians who visit an emergency department or hospital.
Patients feel they have all the information they need and are engaged in decision-making.	When questions are not answered fully, there may be misunderstandings about instructions on how to stay in good health.[517, 518] When people do not feel engaged in decisions, they may be less likely to adhere to recommended drugs,[519] tests or other advice.	
A health care system that is easy to navigate responds quickly to needs and controls pain as best as possible.	Needless waits lead to lower satisfaction with care. Poor pain control leads to unnecessary suffering and in some instances, slower rates of recovery from illness.[520, 521]	

Indicator	Value*	Time trends & comparisons	Bottom line
Percentage of patients who would definitely recommend their hospital to friends and family			**In Ontario, 74% of patients would definitely recommend the hospital in which they received care. This is higher than the average in the USA (69%) but leading American hospitals achieve rates of around 85%.[522] Results are much lower for ED patients; only 58% would definitely recommend their ED to others. There has been no major change in these indicators in the last four years, and there is obvious room for improvement.**
→ Hospital	74%		
→ ED	58%		
Percentage of patients who felt they were treated with respect and dignity			**While most patients in hospital and the ED feel they are treated with dignity and respect, about one in five do not. There has been no major change in the past five years, and there is room for improvement.**
→ Hospital	83%		
→ ED	77%		
Percentage of hospital patients who:			**About one in three hospital patients express concern about timeliness of requests for help — either assistance to go to the bathroom or response to a call button. This has not improved over time. There is room for improvement.**
→ Got bathroom help in time	68%		
→ Though the wait time after a call button was reasonable	62%		
Percentage of ED patients who said they waited too long to see a doctor	48%		**About half of ED patients reported waiting too long to see a doctor. This has not improved in the last five years. There is room for improvement.**

Data source: *NRC-Picker patient satisfaction surveys, provided by the Ontario Hospital Association, FY 2009/10.

Indicator	Value*	Time trends & comparisons	Bottom line
Percentage of patients who thought the staff did everything they could to help control their pain Hospital ED	 78% 52%		**Nearly three in four hospital patients, but only about one in two ED patients thought the staff did everything they could to help control their pain. This indicator has not improved in the last five years. There is major room for improvement.**
Percentage of patients who received answers they could understand when they asked important questions to: A nurse in hospital A nurse in ED A doctor in hospital A doctor in ED Percent of patients who were able to understand explanations about test results Hospital ED	 70% 66% 73% 70% 69% 65%		**Staff in hospitals and EDs do not answer questions or provide explanations that are understandable to patients about one-third of the time. This has not improved in the last four years (data not shown). Improvement is absolutely necessary.**

Data source: *NRC Picker patient satisfaction surveys, provided by the Ontario Hospital Association, FY 2009/10.

5.1

Root Cause	Ideas for improvement
Issue: Low rating of overall satisfaction in emergency department	
Patients do not want long waits in the emergency department.[523]	**Improve patient flow in the emergency department.** Address ALC bed problem and wait times for LTC placement (see section 2.1 — Wait Times in Emergency Departments, and section 2.4 — Access to Long Term Care and Home Care.).
	Inform patients about expected wait times and reason for delays.[524] Good communication with patients, particularly on arrival at the ED, helps manage expectations. Patients' perceptions that wait times are appropriate or are shorter than expected has been shown to be more important than the actual wait time.[525]
When patients don't feel like they're treated with respect or courtesy, or staff are unresponsive to their needs, they rate their overall satisfaction lower.[526, 527, 528]	**Improve staff and provider customer service and interpersonal skills** through clinically focused customer service training.[529] Examples of ways customer service can be improved include: acknowledging people when they arrive, making eye contact, being polite despite stressful situations, showing a positive attitude, and telling people in advance what they can expect and when.
	Provide cultural competence training to help staff understand the role culture plays in interactions between health care staff and patients and their families.[530]
Issue: Low rating on pain control	
Pain is not adequately recognized.	**Monitor pain as if it were the "fifth vital sign"**[531] Mandate the routine use of **visual analog scales or numeric rating scales for assessing pain.**[532]
The physician order for pain relief is delayed.	Consider techniques such as **patient-controlled anaesthesia**, where the patient determines, within limits, how much pain relief he or she needs.[533]
Physicians are afraid of drug-seeking behaviour or creating addiction among patients.[534]	**Educate prescribers on appropriate pain management,**[535] so they better understand drug-seeking behaviours, and ensure they don't overestimate the risk of addiction.
	Use standard protocols for pain control. One protocol, for example, helps providers identify different types of pain (e.g., acute vs. chronic; somatic, visceral or neuropathic) and recommends the best drugs for each scenario.[536]
Issue: Patients do not get the information they require in a way they can understand	
Patients may forget verbal explanations, especially if they are stressed from their illness.	**Provide written discharge instructions for all hospital and emergency department patients.**[537, 538] Written discharge instructions should be simple and easy to understand and translated where necessary (see below).
Patients may not understand instructions.	**Provide patients and families with simplified instructions, using plain language**[539]; written material could also use pictures to reinforce instructions. Patient information tools can be standardized province-wide for common conditions.
Patients may have poor language skills, particularly if English is not their first language.	**Have interpreter services available with interpreters who are trained in medical terminology**[540] for commonly spoken languages in the community. Also have information available in multiple languages that is written in plain language.
Providers may use medical terms that patients do not understand.	**Use different media (e.g., patient videos) to explain complex information to patients.**
	Use the "teach-back" method to ensure that patients understand instructions. Patients are asked to repeat back any key instructions given.[541]
Patients and family members may feel uncomfortable asking questions to clarify instructions. This may be due to not wanting to look foolish or uneducated, being uncomfortable with questioning authority or sensing the provider is rushed and not wanting to bother him/her.	**Give patients and families a chance to ask questions.** Budget enough time for questions after patients and families have reviewed written material and have had a chance to absorb the information.[542] Providers should not be rushing out the door immediately after asking if there are any questions.
	Offer reassurance that there are no "bad" questions.[543]
	Provide Frequently Asked Question (FAQ) sheets to answer the most commonly asked questions.

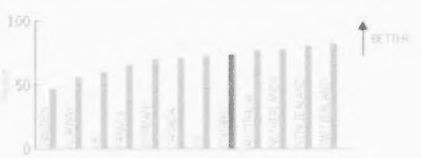
What is Ontario doing?

- The *Excellent Care for All Act*, enacted in June 2010, requires every hospital to have a patient relations process to address patient experience issues.[544] The Act also states that health care organizations must conduct patient experience surveys. Most hospitals already do so voluntarily, and those smaller hospitals who do not yet have a survey will establish one in the coming year. In future years, this requirement will spread to all health care organizations. The Act also requires hospitals to submit annual quality improvement plans, and hospitals have been asked to include at least one performance goal for patient experience in their plans.[545]
- Cancer Care Ontario's Ontario Cancer Plan 2011–2015 outlines how all cancer patients in Ontario will have their interests represented at a Patient Advisory Council, a forum to advise on initiatives to improve the patient experience, as well as having access to tools to help navigate the cancer system and manage their own journey (ocp.cancercare.on.ca).

5.2 Patient experience in primary care

Primary care is often the first place Ontarians seek health care. Ensuring patients have a good experience at the primary care level is important to maintaining a positive view of the entire health care system. A good experience, however, is more than just feeling satisfied with care; it also means that the individual feels like care is designed around his or her needs, that communication is clear and that the right to make one's own decisions is respected.

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
Clear communication from health care providers and easy to understand explanations.	Having clear explanations to answers is an inherent right, and poor communication leads to poorer overall satisfaction with care. Better communication can help people understand why it is important to take certain drugs, treatments or to change health habits, which in turn can lead to better health outcomes.[546, 547]	All residents of Ontario.
Involvement in treatment decisions.	Encouraging people to manage their own chronic conditions and to feel they are in control of their health has also been shown to result in better health behaviours and health outcomes.[548]	
Services that are well coordinated so that people's time is not wasted.	Disorganization and wasted time leads to confusion, inconvenience for patients and families, lower overall satisfaction with care and lost economic productivity.	

Indicator	Value*	Time trends & comparisons	Bottom line
Percentage of adults who have a regular doctor or place of care who rate the overall quality of medical care they received in the past 12 months as excellent or very good	77%		**Approximately three in four adults in Ontario who have a regular doctor or place of care rated the overall quality of the medical care they received in the past 12 months as excellent or very good. Ontario performs relatively well on this indicator. The province is doing better than Quebec and many European countries, and is on par with Western and Atlantic Canada, the US, UK and Australia. Only New Zealand has better results (84%).**
Percentage of adults who have a regular doctor or place of care who said this provider always explains things in a way that is easy to understand	74%		**Among adult Ontarians, 74% felt that their regular doctor or place of care always gave easy to understand explanations. Compared to other countries, Ontario and Canada are in the middle of the pack. Ontario could aspire to match the best results achieved by Switzerland (82%) and New Zealand (80%).**
Percentage of adults who have a regular doctor or place of care who said this provider always tells them about treatment options and involves them in decisions about the best treatment	66%		**Only two in three adults who have a regular doctor or place of care said their provider always tells them about treatment options and involves them in decisions about the best treatment. This is an area where there is poor performance across the globe. Compared to other countries, Ontario and Canada are in the middle of the pack. Ontario could aspire to match New Zealand's result of 80%.**
Percentage of adults who have a regular doctor or place of care who said this provider always spends enough time with them	58%		**Only 58% of Ontarians felt their regular doctor always spent enough time with them. There are many other countries with better performance than Ontario and Canada in this area. Again, Ontario could aspire to match New Zealand's result of 80%. Having the best performance on this and the previous two indicators may help explain why that country has the best satisfaction with the care received.**

Data source: *Commonwealth Fund International Survey of adults, 2010.

Indicator	Value*	Time trends & comparisons	Bottom line
Percentage of adults who thought their time was wasted because their medical care was poorly organized or poorly coordinated	18%		**Nearly one in five adults felt their time was wasted because of poorly organized or poorly coordinated medical care. Ontario and Canada have some of the worst ratings in this area. Improvement is necessary.**

Data source: *Commonwealth Fund International Survey of adults, 2010.

Root Cause

Ideas for improvement

Issue: Doctors do not have time to spend with patients

Providers waste time searching for things and doing unnecessary paperwork, resulting in less time to spend with patients.

Use a well-designed EMR that contains all the patient information and can save time by making it easier to access test results or other information in real-time.[549, 550]

Improve office efficiency.[551] Simple steps that save minutes or seconds of each clinic visit can add up to days or weeks of saved time over a year. See section 2.2 for more information.

Physicians may spend time doing tasks that could be performed by other staff.

Continue to **promote team-based models of care,** such as Family Health Teams, where physicians could share tasks with other providers and the practice as a whole can have more time to spend with patients. See section 2.2 for more information.

Issue: Explanations not always easy to understand

Patients may not understand questions or instructions.

Use the "teach-back" method to ensure that patients understand instructions. Patients are asked to repeat back any key instructions given.[552]

Patients and family members may feel uncomfortable asking questions.

Give patients and families a chance to ask questions.[553] Allow for questions after patients and families have reviewed written material and have had a chance to absorb the information. See section 5.1 for more information.

Issue: Patients are not involved in decisions or treatment options

It takes time to list the options for screening or treatment as well as the pros and cons of each, and to identify what's important to patients (eg. side effects of treatment, cost of different options, etc.).

Develop standard tools for providers to help explain options to patients, as well as the benefits and drawbacks of each. For example, Cancer Care Ontario provides a toolkit for patients that is designed to help them make informed decisions about their cancer screening options. The tools include easy to read information about risk factors, methods of screening, pros and cons of various approaches, and where to go for more information. The material is available from: www.cancercare.on.ca/cms/one.aspx?objectId=44184&contextId=1377

Issue: Patients have a negative customer service experience

When patients don't feel like they're treated with respect and courtesy, or that staff are unresponsive to their needs, they rate their overall satisfaction lower.[554, 555]

Improve staff and provider customer service and interpersonal skills through programs such as clinically focused customer service and communication training.[556] Examples of ways customer service can be improved include: acknowledging people when they arrive, making eye contact, being polite despite stressful situations, showing a positive attitude, and telling people in advance what they can expect and when.

What is Ontario doing?

- The ministry has commissioned a five-year longitudinal study to evaluate the effectiveness of Family Health Teams, including patient experience and patient satisfaction.[557]

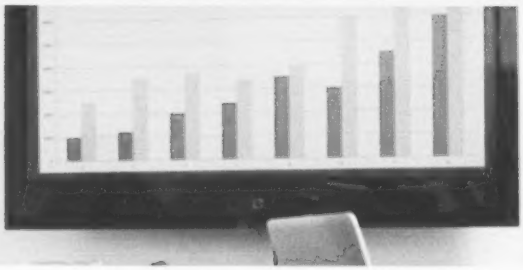
6.1 Cost of service delivery

It is important for hospitals and community agencies to operate efficiently by eliminating waste or using the most effective treatment options, so they can offer the best patient care in exchange for the lowest cost. Part of any organization's plan for efficiency must be to manage finances well and avoid incurring deficits or running into circumstances where it becomes hard to meet commitments to pay bills when they are due. Provincial data on cost effectiveness is poor, and it is difficult to measure inefficiencies across the system. Thus, better data capture is necessary (see section on data advocacy).

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
Hospitals with sufficient revenue to cover their costs.	When hospitals spend more than they receive, they have to borrow money — and when that happens, taxpayer dollars go towards interest charges instead of towards purchasing equipment or providing patient care.	Ontario's taxpayers, who want to know their tax dollars are being wisely managed.
Hospitals able to pay bills on time with liquid resources (i.e., cash).	Again, when hospitals have to borrow to pay bills, taxpayer dollars go towards interest instead of towards needed goods and services.	
Hospital expenses minimized as much as possible, without compromising high-quality patient care.	When hospitals are compared and have significantly different costs to treat the same type of patient, it may mean that less efficient hospitals are using resources inappropriately.	

Indicator	Value*	Time trends & comparisons	Bottom line
Percentage of hospitals running a deficit:†			**Across the province, almost 30% of hospitals reported a deficit in FY 2009/10. The number of hospitals reporting a deficit has decreased by a third in the last year. There is still opportunity to avoid deficits.**
— Province	27%		
— Small community	28%		
— Large community	36%		
— Teaching	14%		
— Chronic/rehabilitation	20%		
Current ratio†† of hospitals (ability to pay bills without having to borrow):			**The ideal current ratio of hospitals in Ontario should be between 1 and 2. Small community hospitals previously had a current ratio which was too high (i.e. more cash on hand then necessary) but this has decreased over the past five years and is now in the desirable range. Teaching hospitals had too low a ratio but this has increased in the past five years, although is still short of the ideal range. Chronic/rehabilitation hospitals have consistently been in the desired range. For large community hospitals, the results have gotten worse over the last five years. The bottom line is that there is still room to improve, particularly for large and teaching hospitals.**
— Province	0.81		
— Small community	1.7		
— Large community	0.7		
— Teaching	0.81		
— Chronic/rehabilitation	1.1		
Cost per weighted case††† in hospitals:			**Even after adjusting for the complexity of cases, the actual cost for a community hospital stay has increased by over 20% in the last four years (more than the rate of inflation). Teaching hospitals, however, reported a slower increase of 13% over the same time period. There is room to improve.**
— Small community	$5,542		
— Large community	$5,262		
— Teaching	$6,072		
Cost per weighted patient day††† in complex continuing care hospitals:			**The cost for a complex continuing care patient's hospital stay per day in small community hospitals is close to $200 more than in other hospitals. Over the last four years, the actual cost for a chronic care hospital stay has increased more than inflation.**
— Small community	$705		
— Large community	$522		
— Teaching	$490		
— Chronic/rehabilitation	$481		

Data source: *MOHLTC, FY 2009/10.
†Technically, a "negative budget position." Based on the Ontario Hospital Service Accountability Agreements: (Total Revenues — Facility Grant Amortization) — (Total Expenses — Facility Amortization).
††Based on the Ontario Hospital Service Accountability Agreements. The numerator includes Current Assets plus debit Current Liability Balances, excluding Deferred Revenues. In plain language, this is the amount of cash or other assets that can be converted quickly into cash. The denominator includes Current Liabilities excluding Deferred Revenues plus credit Current Assets, except Current Asset Contra Accounts. In plain language, this is the amount of short-term debts.
†††Resources Utilization Groups III grouping methodology. The in-patient case weight information enables comparisons among hospitals regardless of differences in the severity of illness and complexity of cases served by these facilities. Costs were not adjusted for inflation.



HOSPITAL

LONG-TERM CARE

HOME CARE

PRIMARY CARE

Root Cause	Ideas for improvement
Issue: Overall demand for hospital services is increasing beyond what hospitals can provide with current budgets.[558]	
Avoidable demand on hospitals.	**Improve chronic disease management in the community** (see section 3.2). Acute care in-patient costs for conditions related to chronic disease are high, with acute myocardial infarctions (AMIs) and cerebrovascular diseases representing the two most expensive medical conditions in Canada.[559] Studies have shown that improving the care of people with chronic diseases before they require hospitalization can decrease associated hospital costs.[560, 561, 562, 563, 564] **Improve access to long-term care (LTC) and home care, and ensure safe conditions and appropriate care to prevent avoidable hospitalizations** (see sections 2.4, 4.5 and 4.6). **Improve access to primary care** (see section 2.2). Studies have shown that better access to primary care results in fewer visits to the emergency department and admissions to hospital.[565, 566] **Coordinate among health services,** such as primary care, specialists and hospitals, to improve health outcomes and use of resources.[567]
Avoidable hospital readmissions.	Ensure patients leave the hospital on the right medications (see section 3.1) and have all the information they need to function at home. Consider specialized out-patient clinics (e.g., for congestive heart failure[568, 569, 570]) or similar services that have been shown to reduce readmissions (see section 3.3).
Patients are occupying hospital beds unnecessarily. These patients do not require the intensity of resources or degree of services provided in that setting, and could be better served elsewhere.[571]	**Ensure that patients are being cared for in the most appropriate place** (see sections 2.4 and 6.2).
Hospital services such as diagnostic screening and surgical procedures may be used inappropriately.	**Eliminate unnecessary tests or procedures, such as repeat tests or pre-operative tests for minor procedures** (see section 6.3). A study of Ontario doctors revealed that use of CT and MRI screening may not always be for appropriate reasons.[572] Consider using appropriateness criteria for CT and MRI scans,[573] as well as for procedures such as hip and knee replacements[574, 575, 576] and cataract surgery.[577]
Unnecessary duplication of tests due to fragmentation of care. The results of tests ordered in primary care are often not available to hospital staff.	**Implement integrated electronic health records (EHRs)**, which provide convenient access to test results ordered by other providers and in different settings.[578] This could help reduce unnecessary repeat tests that are done because test results from elsewhere are unavailable.
Avoidable complications of hospital care waste resources. Hospital-acquired infections[579] and other complications that develop while in hospital increase length of stay and overall costs.	**Work on areas where there is a strong business case for quality.**[580] A strong business case can be made when investments in improving quality are more than offset by reductions in cost for the same organization within a reasonable period of time. Business cases are well established for areas such as ventilator-associated pneumonia[581] and pressure ulcer prevention.[582]
Inefficient processes within the hospital waste time and resources.	**Improve use of staff time and reduce redundancies** (see section 2.1).[583] **Improve efficiency of discharge processes.**[584] Consider options for improving the discharge rate, such as setting target discharge dates, staggering discharge times during the day, and clearly communicating plans with the patient and family so they can be ready for discharge. Utilization management software may help guide decisions on when it is safe to discharge patients. (See section 8.1 for information on improving communication and collaboration between hospitals and those who will be providing post-discharge care, and section 2.1 for information on improving care coordination to ensure that patients are moved to the right place as soon as possible so they are not occupying beds unnecessarily.)

What is Ontario doing?

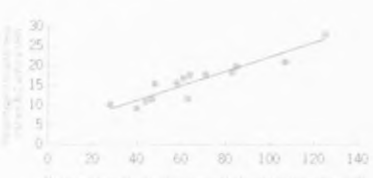
- The MOHLTC is working on a major reform of how hospitals are funded. Currently, hospitals are funded mostly through fixed global budgets which are largely determined by historical factors. In many cases, this funding does not reflect the population served or the types of patients cared for. Hence, a hospital in a high growth area may find it difficult to provide services to the expanded population if its global budget does not increase to reflect the greater demand. The MOHLTC's Patient-Based Payment strategy[585] aims to use a "money follows the patient" approach which links hospitals' funding to the level of services and quality of care they deliver. The strategy draws on the Health-based Allocation Model (HBAM), which determines the expected costs of delivering care, taking into account differences across communities in age, socioeconomic status and existing health conditions.

6.2 Right service in the right place

Individuals should be cared for in settings that best meet their needs, rather than settings that are more costly and not designed to accommodate them. The most pressing example is the Alternate Level of Care (ALC) patient.[586] These individuals (often, frail, elderly with multiple chronic conditions) may enter hospital with an acute problem needing immediate attention and then recover but still have difficulty functioning independently. The doctor may not discharge the patient if she is concerned that he cannot get enough home care to live safely at home. The patient may then be referred to a long-term care (LTC) home, but must wait in the hospital, often for weeks or months as an ALC patient, until a bed becomes available (see section 2.4).

Another example is people who are placed into a LTC home who could have been served elsewhere. Individuals who do may not need all the services that a LTC home provides may still end up being referred there because of lack of alternatives. The MAPLe (Method for Assigning Priority Levels) algorithm allows planners to identify these individuals.[587]

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
Patients who no longer need hospital services are discharged to a more appropriate setting.	The cost of caring for an ALC patient in hospital is higher than caring for the same person in a more appropriate setting, such as an LTC home. Furthermore, LTC staff are specially trained to take care of people who are frail and need many support services; thus, the resident can be provided with more appropriate care. Another consequence of the ALC challenge is that beds occupied by ALC patients are not available to patients waiting to be admitted from the emergency department, leading to long wait times. Elective surgeries could be delayed as well. Finally, when older people are hospitalized for acute illnesses, they may lose their independence and are at high risk for discharge to LTC homes.[588, 589, 590, 591]	Ontario's 2,800 acute care hospital patients and 1,900 patients in other hospital settings (e.g. mental health, rehabilitation facilities) who, on any given day, are designated as ALC patients.[592]
People whose needs can be met through alternatives to LTC (e.g., home care or supportive housing) can remain living in the community — with LTC beds reserved for those who truly need them.	When less expensive alternatives of the same or better quality are available but not used, healthcare resources are wasted.	Ontario's 170,000[593] long-stay home care clients who may need more care in the near future.

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of patient bed days in acute care hospitals that are designated as ALC	16%*		**One in six acute care hospital beds in Ontario are filled with patients who could best be cared for elsewhere. This problem worsened from FY 2006/07 to FY 2008/09 and has not improved in the last year, FY 2009/10, despite huge investments from the Aging at Home strategy (see next page). *This is one of the most urgent priorities for improvement in Ontario.***
Relationship between ALC bed days and LTC wait times			**There is a strong relationship† between wait times for LTC placement for hospital patients and the percentage of ALC bed days within a LHIN. Every increase of about 5.6 days in wait times leads to a 1 % increase in the percentage of beds designated as ALC within that LHIN.**
Percentage of people placed into an LTC home who do not have high or very high needs for LTC services and could potentially be cared for elsewhere	22%**		**Over one in five people placed in LTC homes do not have high or very high care needs. These people could potentially be cared for in other settings in the community (e.g., with more home care or in supportive housing arrangements). This indicator has improved in the last two years; however, there is still room for improvement.**

Data sources:
*Discharge Abstract Database (DAD), Canadian Institute for Health Information (CIHI), April 2006 to March 2010, provided by Cancer Care Ontario.
**Based on the MAPLe score.[587] Client Profile Database, MOHLTC, January to March 2010, provided by the Toronto Central CCAC.
†R-squared = 0.86, indicating a strong relationship.

HOSPITAL
LONG-TERM CARE
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PRIMARY CARE

Root Cause	Ideas for improvement
People's care needs are inadequately assessed.	**Identify early those at risk of being hospitalized and subsequently becoming LTC patients** — for example, frail individuals or those with dementia living in the community with unmet needs.[594, 595, 596] Identifying these people early and providing them with adequate home care support may help to slow down the decline in their health and make it easier for them to go back home should they ever need to be hospitalized. One program in the Mississauga Halton LHIN aims to ensure that every person aged 75 and over who comes to an emergency department has a home care assessment.[597] Use of the interRAI Community Health Assessment by community support agencies can help to identify more objective levels of risk in this population.
Patients may decondition while in hospital. Being in a foreign environment may lead some patients to lose their function.	Started in 2007, **transitional care programs** give former hospital patients a period of reconditioning in a retirement home before they return home.[598] The Champlain LHIN has piloted a 22-bed program that provides alternative care to medically stable hospital patients waiting for an LTC bed. This has reduced bottlenecks that lead to emergency room crowding and cancelled surgeries.[599] **Patients may benefit from acute, in-hospital rehabilitation and intensive, long-term, follow-up rehabilitation** to improve the chances that they will recover their pre-hospitalization abilities.[600]
People are prematurely labelled as needing LTC, or go into LTC before they need it.	**Use objective criteria to help determine who truly needs LTC.** Carefully screen individuals' healthcare needs to ensure that only those with heavy needs actually get on the waiting list. This may help to address situations where people who fear long waits get themselves on the list "just in case." Tools such as the MAPLe score[601] can help care planners decide whether an individual's needs are heavy enough that they should be put on the list. **Employ the Home First Approach and send patients home from the hospital rather than directly to LTC**[602] (see section 2.4).
Alternatives to LTC are not being fully utilized or supported.	**Ensure there are sufficient alternatives to LTC homes, such as assisted living homes or supportive housing,**[603] where frail individuals can access some degree of ongoing care if their needs are less than what an LTC home would provide (see section 2.4). Alberta has developed a Continuing Care System that includes supportive housing in its strategy.[604, 605] In 2009, HQO reported on the region around Lethbridge, Alberta, where this strategy helped keep the waiting list for LTC at only 29 days despite using one-third fewer LTC beds than Ontario. This region provides publicly funded options for assisted living and supportive housing that allow people to live in a home-like environment with 24-hour assistance when needed if they require less care than that provided by LTC but more than that offered by home care.[606]
Limited availability of home care.	**Consider increases in home care availability.** In the past, there were caps on hours of care for home care clients; these have recently been extended. This change may allow some clients to avoid being put on a waiting list for LTC. However, for people with heavier needs, other options such as assisted living may be more cost-effective than home care.
Avoidable demand due to poorly controlled conditions that could have been addressed in a primary care setting before they escalated.	**Improve primary care services.** Improve access to primary care (see section 2.2), including after-hours primary care and management of chronic diseases (see section 3.2) so patients are less likely to require hospitalization.

What is Ontario doing?

- Ontario has invested over $700 million over the past three years in the Aging at Home strategy,[607] which recognizes the need to provide access to a continuum of services for seniors and their caregivers, help seniors continue to lead healthy and independent lives, and assist those who wish to remain at home to live safely and with dignity and independence. The strategy was expected to relieve pressures on hospitals and LTC homes by helping to find more appropriate settings for patients ready for discharge from hospital.[608] It was also intended to help seniors avoid unnecessary visits to the hospital, reduce emergency department wait times[609] and ultimately reduce ALC. However, the ALC situation has not yet improved, and it is important to evaluate the impact of this strategy (please see the data advocacy section 1.12).

6.3 Avoidable emergency department visits

Many people end up in an emergency department (ED) because they are not familiar with other available choices. While EDs are intended to handle serious illnesses and injuries that require fast, highly skilled care, people often go to an ED for minor problems that could be treated in a doctor's office or after-hours clinic. This section examines the rate of avoidable ED visits in Ontario.

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
People with non-urgent conditions (e.g., colds, sore throats, ear aches, bladder infections or needing prescription renewals) should be treated outside the ED in doctor's offices, after-hours clinics or urgent care centres.	Beyond the high cost of treatment in an ED, patients miss out on the benefits they receive when they are treated by a primary care doctor who knows them and is familiar with their medical history.	Ontario's one in five residents who visit an ED each year[610] (there are approximately 5.5 million ED visits every year in major cities within Ontario[611]).
Early identification and treatment of long-term care (LTC) residents' worsening medical conditions (e.g., diabetes, pneumonia and congestive heart failure), so that their condition does not deteriorate to the point that they need to be sent to an ED.	Without early identification and treatment, LTC residents may experience an avoidable ED visit[612] and suffer harm because of an avoidable worsening of their medical conditions.[613]	Ontario's 75,000 residents in 626 LTC homes across the province.[614]
Treatment within an LTC home for residents with non-urgent, low acuity conditions, so it doesn't become necessary to send them to an ED.[†]	An LTC resident who experiences an avoidable ED visit is exposed to an unfamiliar place,[615] which may be distressing if he or she has dementia.[616] Other negative consequences include inconvenience for the resident (with long lengths of stay in the ED) and expense for the province (LTC residents usually arrive in the ED by ambulance).	

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of people in Ontario who thought they could have been treated by the doctor or staff at the place where they usually get medical care if care had been available the last time they went to the hospital or ED	48%*		**Almost one in two Ontarians felt they could have been treated by their primary care provider if care had been available the last time they went to the hospital or ED. Ontario is tied with the rest of Canada, the US and Switzerland as having the worst results on this indicator compared with eight other countries. Hospital and ED resources could be better utilized if individuals were seen in more appropriate care settings.**
Rate of potentially avoidable ED visits per 100 LTC residents per year	21**		**Potentially avoidable ED visits are common among LTC residents. There has been no major change in the past seven years in this area. There is likely room for major improvement.**
Rate of low acuity ED visits per 100 LTC residents per year	7.8***		**Over the past seven years, there has been continuous improvement in the rate of low acuity ED visits by LTC residents. This is good news, but there may still be room for further improvement.**

Data sources:
*Commonwealth Fund International Survey of Adults, 2010.
**National Ambulatory Care Reporting System Database (NACRS) and Ontario Health Insurance Plan (OHIP), FY 2009/10, calculated by Institute for Clinical Evaluative Sciences (ICES).
***Registered Persons Database, OHIP, Discharge Abstract Database, NACRS, FY 2009/10, calculated by ICES.
† Non-urgent visits are defined as those assessed according to the Canadian Triage and Acuity Scale (CTAS) as level 4 or 5, where the person was subsequently sent back to the LTC home.

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Root Cause

Ideas for improvement

Issue: Non-urgent ED visits.

People do not understand the purpose of the ED or may be unaware of alternatives to the ED, such as after-hours or walk-in clinics.[617]

Consider public education and awareness campaigns about the appropriate use of the ED. Also consider further promotion of the use of the Telehealth Ontario toll-free number, which gives Ontarians the opportunity to talk with a nurse to help assess when to go to the ED.[618,619] Telephone nursing triage systems such as Telehealth Ontario have been found to reduce inappropriate use of EDs.[620]

Poor access to primary care. People will use the ED if they don't have a primary healthcare provider, cannot get a timely appointment with their provider, or after-hours service is not available.[621, 622]

Improve access to primary care. Consider better organization of primary care offices and management of patient appointments to reduce wait times, and provide after-hours service (see section 2.2).

Patients of family physicians who practice within groups or teams that provide after-hours clinics and access to on-call advice from a clinician are less likely to go to an ED.[623] Establishment of family health teams in Peterborough resulted in 15,000 fewer ED visits.[624]

The frail elderly and people who have poorly controlled chronic diseases are prone to health crises. Patients may not follow healthcare providers' recommendations for self-management or receive all evidence-based treatments from their providers.

Work towards better management of patients with chronic diseases. Patients with chronic diseases need to be more engaged in the care and management of their conditions. Primary care of these patients should be carefully managed to avoid crises requiring immediate attention (see section 3.2).

Issue: Avoidable ED visits by LTC residents.

Staff at LTC homes may be uncomfortable handling relatively minor emergencies and may have a low threshold for sending recently discharged patients back to hospital at the first sign of any complication or regression.

Increase training of staff at LTC homes so they know how to handle and assess minor emergencies. Nurse practitioners in LTC homes can provide clinical support for both patients and staff to reduce unnecessary use of EDs.

Consider use of telemedicine to access expert advice with a video link.[625]

An on-call primary care provider is not available to assess the resident's situation.

A lack of diagnostic equipment in the LTC home (e.g., X-ray machines, urgent lab services) requires residents to go to hospitals.

Consider redesigning on-call schedules — for example, sharing an on-call physician, nurse practitioner or physician assistant between LTC homes in close proximity to each other.

Consider using nurse practitioners and registered nurses either in the on-call schedule or to mentor other staff. For example, the Toronto Western Hospital created a Mobile Emergency Nursing Team of registered nurses who take acute care nursing expertise directly to the bedside of LTC home residents to reduce ED visits. In the first year of operation, the team was able to care for 78% of residents who would otherwise have been transferred to the ED for assessment and care.[626] Similar programs exist in the Central East LHIN[627] and Central West LHIN.

Family members may exert pressure to send a resident to an ED for assessment. This may occur if the family does not have confidence in the staff's ability to handle the situation.

Reassure families that strategies above have been taken to ensure proper assessment within the home. Also inform families of potential risks of ED transfers (e.g., hospital-acquired infection, worsening confusion, wandering, falls in an unfamiliar environment).

What is Ontario doing?

- Your Healthcare Options (www.health.gov.on.ca/en/public/programs/hco/default.aspx), launched in 2009, provides information about different ways to access healthcare (e.g., walk-in clinics, urgent care centres and family health teams).[628] In addition, public awareness campaigns continue to encourage use of Telehealth Ontario's toll-free services, which advise whether an ED visit is necessary.[629]
- In FY 2010/2011, funding for new community health centres (CHCs) will help provide physician services 24/7, so patients can avoid unnecessary ED visits.[630]
- The $4.8 million Geriatric Assessment and Intervention Network (GAIN) program is establishing four urgent/emergent clinics for seniors in the Central East LHIN's largest community hospitals. Emergency and community-based physicians can refer patients to these clinics, staffed by a highly trained geriatric team and supported by a geriatrician, for specialized assessment and intervention. If required, patients are admitted to an in-patient unit specially designed to care for frail seniors and/or linked to community support services. The clinics are expected to see nearly 8,000 visits annually after all four open by April 2011.[631]
- Physicians participating in eligible primary healthcare models are offering "After Hours" and "Telephone Health Advisory Service" (THAS) services to enrolled patients to improve access to family health care and divert non-emergency visits from hospital EDs.[632]

6.4 Avoiding unnecessary drugs and tests

In healthcare, there are many instances where the choice to administer drugs or tests adds no value and should not be made, or where it's possible to substitute a less expensive alternative that is equally effective. This section looks closely at two examples: unnecessary pre-operative testing for cataract surgery[633] and using more expensive alternatives to thiazides to treat high blood pressure.[634]

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
The elimination of tests that do not improve patient safety, including electrocardiograms (ECGs) and chest X-rays before minor procedures (e.g., cataract surgery).[635, 636]	Unnecessary tests waste time and money.[637] In the case of chest X-rays, patients are also exposed to extra radiation.	Ontario's 13 million residents, including the approximate 140,000 people who receive cataract surgery each year.[638]
The use of lower-cost drugs if they are just as effective as newer, more expensive ones — such as thiazides, which are a type of diuretic or "water pill."[639]	Using more expensive medications, when cheaper, equally effective ones are available, wastes money.[640]	Ontario's residents who are newly diagnosed with uncomplicated hypertension, including more than 14,000 seniors last year.[641]

Indicator	Value	Time trends & comparisons	Bottom line
Rate of pre-operative ECG testing per 100 cataract surgeries	29*		**About three in 10 patients who have undergone cataract surgery received an unnecessary ECG test. Furthermore, about one in 25 individuals also had a chest X-ray. Ontario has done well in reducing the use of these wasteful tests over the last seven years. Since the last time point, these services have been delisted; however, there are many other areas to look at in the future.**
Rate of pre-operative chest X-ray testing per 100 cataract surgeries	3.9*		
Percentage of elderly patients with uncomplicated hypertension† treated with diuretics such as thiazides as a first-line treatment within one year of diagnosis	17%**		**Just one in six elderly patients with uncomplicated hypertension receive treatment with diuretics such as thiazides within one year of diagnosis — and this indicator has gotten steadily worse over the past five years. There is room for improvement.**

Data sources:
*Registered Persons Database (RPD), Discharge Abstract Database (DAD), Same Day Surgery Database, Ontario Health Insurance Plan (OHIP) Claims Database, FY 2009/10, calculated by Institute for Clinical Evaluative Sciences (ICES).
**RPD, Ontario Diabetes Database, Ontario Drug Benefits Database, DAD, OHIP Claims Database, FY 2009/10, calculated by ICES.
†Uncomplicated high blood pressure is defined as high blood pressure where the patient does not have diabetes, kidney failure, coronary artery disease, stroke, migraine or liver failure, where other drugs for high blood pressure would be more appropriate. Guidelines suggest that in such cases the drug of choice is a thiazide.

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Root Cause

Providers may be unaware of or may not remember all the details of practice guidelines or appropriateness criteria, especially if the criteria are complex with multiple recommendations and exceptions to recommendations.

An outdated practice may persist because of force of habit.

Providers may not know whether or not they are following guidelines for appropriate use, and may not realize there is a problem.

Providers may be sceptical of the validity of practice guidelines or appropriateness criteria.

There is no incentive to stop ordering unnecessary tests or services.

Healthcare providers may be influenced by sales representatives from drug companies.[651] Healthcare providers may lack time to critically appraise the literature regarding more expensive alternatives and defer to information provided by sales representatives from drug companies. Often, marketing campaigns promote more expensive drugs over older, less expensive drugs.

Making change is difficult in a complex health care system, where all of the root causes above reinforce each other.

Ideas for improvement

Organize information in appropriateness criteria into decision trees or algorithms. Appropriateness criteria often identify many different clinical scenarios and the tests which are and are not appropriate in each situation.[642, 643] These criteria are often not followed,[644] however, and part of the reason may be that the way they are designed makes it hard to quickly look up the right clinical scenario. A decision-tree format can help the user find the right recommendation with greater ease.

Embed decision support algorithms into the test ordering process and issue prompts or request confirmation if appropriateness is rated low. Such algorithms ask the health care provider questions about the patient's symptoms or conditions and match that information against appropriateness criteria. If the test is likely inappropriate, the algorithm may issue a warning, suggest alternatives to the test, or request confirmation that the test is still needed. Such algorithms work best with electronic ordering systems. Massachusetts General Hospital, using such a system, reduced the number of likely unnecessary CT scans by more than half.[645] The Medicare program in the US is currently running broad pilot tests of these systems.[646]

For certain tests that should be ordered not routinely but only in exceptional circumstances, eliminate tick-box options in order forms or standard order sets. When this was done for urea and Erythrocyte Sedimentation Rate (ESR) testing in Ontario in the 1990s, use of these tests decreased 58%.[647]

Regularly measure rates of appropriate use of tests or other services to give providers and organizations an idea of how they are performing and to help them identify areas for improvement.[648]

Opinion leaders can help encourage the adoption of evidence. Identified by their peers, these "educational influentials" operate within their communities to teach and facilitate change.[649, 650]

Do not pay for services when they do not meet criteria for appropriateness. See "What is Ontario Doing?" below for examples. When policies like this are enacted, there are usually mechanisms to allow payment in exceptional circumstances.

Programs involving trained academic detailers (often pharmacists or nurses), who visit primary care offices to promote evidence-based drug prescribing practices based on objective appraisal of the literature, have successfully changed prescribing practices.[652, 653, 654, 655]

Multifaceted interventions are the most likely to change provider behaviour. For example, a project by the Ontario Guidelines Advisory Committee and the Institute for Clinical Evaluative Sciences reduced the use of pre-operative chest radiography for low-risk surgeries in Ontario hospitals by 13%, and the largest changes were observed in institutions with the highest rates of chest radiography use pre-intervention.[656] This intervention involved workshops to disseminate information, the development of a pre-operative testing checklist, and identification of opinion leaders, who were consulted about barriers to adoption and trained to facilitate change. Hospital-specific feedback on pre-operative testing rates was also provided to all Ontario hospitals.

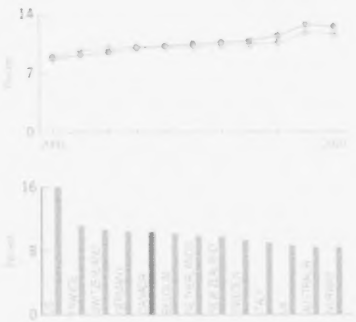
What is Ontario doing?

- On June 3, 2010, the *Excellent Care for All Act* was passed into law. Health Quality Ontario, under the legislation, will make recommendations on possible changes to the way health care is covered and paid for to ensure that it is consistent with the best clinical evidence.[657]
- Effective July 1, 2010, changes were made to the OHIP fee schedule that stopped payment for certain services judged to be unnecessary, including ECGs and chest X-rays before cataract surgery (unless there is some other reason to do them) and sleep studies that are repeated too soon after a previous study.[658]

7.1 Overall spending and value for money

Healthcare is a large and complex system that consumes significant financial resources. Calculating healthcare spending as a percentage of provincial gross domestic product (the total value of all the goods and services Ontario produces) is one way to quantify Ontario's investment. However, a higher or lower number doesn't necessarily mean the province has found the right or best level of healthcare spending. Paying more might be a good decision if Ontarians could be confident they were buying higher-quality healthcare. At the same time, healthcare spending must be balanced against spending in other areas, such as education, social services and infrastructure.

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
Good value, including high-quality healthcare services, in exchange for their taxpayer dollars.	When Ontarians overpay for healthcare, they have less money to spend on other high-priority areas.	Ontario's 13 million residents.

Indicator	Value*	Time trends & comparisons	Bottom line
Total healthcare spending as a percentage of gross domestic product (GDP)[1] — Ontario — Canada	12.2% 11.7%		**In 2010, Ontario spent 12.2% of its total GDP on healthcare, a 38% increase from 2000. Historically, Ontario spent less of its GDP on healthcare compared to Canada as a whole — but now it spends more. The peak seen in 2009 may not be a reflection of increased healthcare spending, but rather the result of a contraction in overall economic activity. Especially during difficult economic times, it is a challenge to sustain spending increases.** **In 2008, Canada placed fifth in spending when compared to other Organisation for Economic Co-operation and Development (OECD) countries in total healthcare spending.[2] Ontario appears to spend more of its GDP on healthcare than all countries except the United States and France.**
Health Expenditure as a Proportion of Total Health Expenditure — Public spending — Private spending	67% 33%		**Currently, two-thirds of healthcare spending comes from public dollars. This proportion has been stable since 1996. There was a significant shift towards more private spending from 1992 to 1996; prior to that time period, almost three-quarters of health expenditures were publicly funded.**
Total healthcare expenditures in Ontario — Total spending — Public spending — Private spending	$75 billion $50 billion $24 billion		**In 2010, Ontario's total spending on healthcare was projected to be $75 billion — a major increase of 91% since 2000. Healthcare expenditures have risen by an average of 9.1% per year since 2000.**
Total healthcare expenditures in Ontario per capita — Total spending — Public spending — Private spending	$5,641 $3,800 $1,841		**Ontario's per capita spending on healthcare was projected to be $5,641 in 2010 — an increase of 69% since 2000. Since 2000, per capita healthcare expenditures have risen by an average of 6.9% per year.**

Data sources:
[1] Canadian Institute for Health Information, 2010.[3] Data for calendar year 2009 and 2010 are forecasted.
[2] Organisation for Economic Co-operation and Development, 2008. Note the OECD calculation is different, giving rise to slightly lower numbers.[4]

Expenditures versus value for money

Ontario spends more on healthcare than many other industrialized countries — but is the province getting added value for its extra investment? Unfortunately, as the table below indicates, Ontario gets lower scores on several of the selected key quality indicators than eight countries that spend less. When researchers[66] compared Canada's performance to the performance of European countries across a much more detailed list of indicators, they observed that treatment quality in Canada was on par with most European countries, but wait times and patients' rights scored lower. They ranked Canada in last place among 32 nations on the "Bang-for-the-Buck" index.

Indicator	Ontario	UK	Netherlands	Norway	Sweden	Australia	New Zealand	USA	France
Total healthcare expenditure as a percentage of GDP, 2008*	11.2%†	8.7%††	9.9%††	8.5%††	9.4%	8.5%†††	9.9%	16%	11%
Total percentage of public health expenditure, 2008*	68%	83%	n/a	84%††	82%	n/a	80%	47%	78%
Percentage of family doctors using electronic medical records (EMRs), 2009**	43%	96%	99%	97%	94%	95%	97%	46%	68%
Percentage of adults able to see a doctor the same or next day, 2010***	48%	69%	69%	42%	48%	65%	77%	54%	60%
Percentage of adults who waited four weeks or more to see a specialist, 2010***	51%	28%	30%	48%	45%	46%	38%	17%	47%
Percentage of adults who rate the overall quality of medical care they received in the past 12 months from their regular doctor's practice or clinic as excellent or very good, 2010***	77%	79%	54%	59%	43%	76%	84%	74%	67%
Mammography screening rates, 2008[§]	73%	75%	85%	98%	84%	n/a	n/a	n/a	78%
Life expectancy (age), 2007[§§]	81	80	80	81	81	82	81††	78	81††
Infant mortality rate per 1,000, 2007[§§§]	5.2	4.8	4.1	3.1	2.5	4.2	4.8	n/a	3.8

Data sources:
*Organisation for Economic Co-operation and Development, 2010.[65]
**Commonwealth Fund International Survey of Physician Practices, 2009.
***Commonwealth Fund International Survey of Adults, 2010.
†EuroHealth Consumer Index 2008.[67] Ontario rates from Canadian Community Health Survey, 2008.
‡World Health Organization.[68] Ontario data from Statistics Canada, Canadian Vital Statistics, Death Database and Demography Division (population estimates), CANSIM table 102-4307. Ontario result is a three-year average of 2005-2007.
§Organisation for Economic Co-operation and Development, 2010. Ontario numbers from Statistics Canada CANSIM, table 102-0504 and Catalogue no. 84F0211X.
†Estimate, adjusting to the Organisation for Economic Co-operation and Development calculation method.
††Estimated results.
†††Data for 2007.

7.2 Information technology

Information technology (IT) can enhance efficiency and deliver tools that enable high-quality care. The Ontario government created eHealth Ontario in 2008 to fulfill its promise of "an electronic health record by 2015." The IT systems of the future should make it possible to easily share information throughout the healthcare system, as well as supporting clinical decision-making. IT in healthcare refers to secure, computerized systems designed to collect, manage and relate healthcare information to healthcare providers. An electronic health record (EHR) is generally defined as a secure and private lifetime record of an individual's health history and care across the healthcare continuum, which is available electronically to authorized healthcare providers. In comparison, electronic medical records (EMRs) are less integrated secure systems, used in one healthcare setting, and are not accessible outside that setting.[665] EMRs often also include higher-level functions that provide decision assist capabilities to providers, such as reminder systems.[666]

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
Electronic entering and storage of notes and orders.	Illegible handwriting or transcription mistakes may lead to errors, and time may be wasted searching for missing or misfiled information.	Ontario's 13 million residents and healthcare professionals.
Electronic error checks and reminders of follow-ups and treatment timing.	Less than optimal drugs may be prescribed, doses may be miscalculated, drug interactions and allergies may not be flagged and providers may forget to schedule follow-up tests and visits.	
Shared but secure information for providers about medical history and data such as test results.	Teamwork and communication among providers may not be as effective, tests may be unnecessarily repeated, the wrong treatments may be recommended if the provider doesn't have the most current information, and time may be wasted on repeated data entry.	
Access to medical information that helps individuals better manage their own care.	Delayed communication with a primary care provider or patients with limited access to their own medical information may lead to patients being less able to carry out self-management activities, more unnecessary doctor visits and extra time spent scheduling appointments.	

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of budget spent on information systems in:			**Over the last two years, spending on IT has been gradually increasing among all of the healthcare sectors except in mental health and addiction centres. As a whole, however, the healthcare sector still spends far less than the banking industry (7%).[667, 668] There is room for improvement.**
— Hospitals	3.6%*		
— Community care access centres (CCACs)	2.5%		
— Children's treatment centres	2.0%		
— Mental health and addiction centres	0.7%		
Electronic Medical Record Adoption Model℠ (EMRAM) score[†] (from stage 0 to 7), measuring how far acute hospitals have progressed in adopting IT:			**Ontario's hospitals have made progress in adopting IT, but there is room for improvement. Small community hospitals lag behind the Ontario average, while large community and teaching hospitals are above the Ontario average. Only 6% of all hospitals have reached EMRAM stage 4, and North York General Hospital is the first and only hospital in Ontario to hit stage 5.**
— Ontario	2.1**		
— Small community hospitals	1.7		
— Large community hospitals	2.8		
— Teaching hospitals	3.3		
Percentage of hospitals that use IT applications to:			**More than one in five Ontario hospitals can send electronic referrals; while one in six have a computerized entry system for orders. Almost all hospitals report being able to store and retrieve digital images; however, only six in 10 hospitals can store electronic patient records. There is still room for improvement as the ability to share electronic information among hospitals is low.**
— Send electronic referrals	21%**		
— Store electronic patient records	60%		
— Do computerized practitioner order entry	13%		
— Store and retrieve digital images	89%		

Data sources:
*Ontario Hospital Reporting System, FY 2009/10, provided by MOHLTC.
** HIMSS Analytics™ database, December 2010, provided by the Ontario Hospital Association.
†The Electronic Medical Record Adoption Model℠ score[669] is proprietary to HIMSS Analytics™ and includes the following categories: 1 — basic IT in pharmacy, lab, X-ray; 2 — data pooled together, doctors can check results on system; 3 — nursing flow sheets documented electronically, system flags errors; 4 — computerized physician order entry, electronic clinical protocols, can send X-ray files digitally outside hospital; 5 — advanced tools for drug safety (closed loop medication administration); 6 — doctors enter clinical notes electronically; 7 — paperless hospital.[670]

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Indicator	Value	Time trends & comparisons	Bottom line
Percentage of adults who have e-mailed their regular doctor's practice with a medical question	3.4%***		**Only 3.4% of adults in Ontario have e-mailed their family doctor with a medical question. Both Ontario and Canada lag behind a number of countries, and the U.K. has the best results (9.4%). There is major room for improvement.**
Number of primary care physicians that have enrolled in provincial EMR adoption programs	4,303§		**As of September 2010, over 4,300 primary care physicians have enrolled in provincial EMR adoption programs that support physicians throughout their effort to use and benefit from EMRs. The target is to have 9,000 primary care and specialist physicians enrolled by March 2012.[669]**

Data sources:
***Based on Commonwealth Fund International Survey of Adults, 2010.
§ 2006–2010 cumulative data as of November 24, 2010, including data from both the Primary Care Program (implemented in 2005) and the New Adopters program (implemented in November 2009), supplied by OntarioMD. April to June 2006 data includes cumulative data from July to September 2005, and the score for each quarter is a rolled-up value of the preceding quarter(s).

7.2

Root Cause

Concerns about the costs of implementing an EMR.[672] Costs include hardware, software licences, training, maintenance and upgrades.

Concerns about lost productivity when transitioning to an EMR.[683, 684] Some physicians report that it takes months or years to fully implement an EMR. Healthcare providers may feel there is no incentive to absorb the cost and hassle.

Lack of comfort with a new system and fear of problems, such as system crashes, data loss or security breaches.[689]

Lack of technical expertise and general computer skills,[692] such as navigating with a mouse and typing proficiency.

Systems are not very user-friendly and may have poor interface design — for example, requiring the user to navigate through too many menus to access information.

Uncertainty about what type of system to use, and concerns that it may become outdated.

Uncertainty over which software will prevail.

Difficulty using the data in EMRs to monitor quality.

Ideas for Improvement

Offer incentive programs to either subsidize healthcare providers' office EMR costs or provide bonuses for delivering higher quality care.[673] In September 2010, Canada Health Infoway pledged $380 million to speed up implementation of EMRs across Canada.[674] Ontario's EMR Adoption Program provides funding to promote and support EMR use by community-based physicians.[675]

Develop a business case for an EMR. For example, at Brigham and Women's Hospital in Boston, the implementation of a computerized order entry system resulted in net savings of $16.7 million over 10 years.[676] Consider how an EMR can decrease waste — for example, by decreasing test repetition, reducing time spent searching for results or entering information, and reducing the need for clerical personnel.[677, 678]

Consider the health outcome benefits and cost reductions from better patient care — for example, reducing health disparities, improving outcomes and providing better continuity of care.[679, 680, 681] Decision support systems can help improve prescribing practices, reduce drug errors and remind providers when screening is due.[682]

Promote an EMR's capacity to improve productivity. Once integrated into a practice and its workflow, an EMR can increase productivity by streamlining processes and reducing duplication, such as unnecessarily repeated tests.[685, 686]

Minimize disruptions to workflow and productivity when implementing an EMR by establishing appropriate procedures and policies early in the process.[687] OntarioMD's Transition Support Program supports groups through this process.[688]

Standard protocols exist for when and how to back up data, how to prevent system errors and data loss, and how to address security and privacy issues.[690]

Identify champions or leaders.[691] Healthcare providers who have experience with EMRs can reassure others that there are standard protocols to protect against computer problems (e.g., back-up systems, firewalls, etc.) or provide tips on how to implement an EMR more smoothly.

Consider voice recognition software[693] **or tablet-based systems** to make data entry and navigation more convenient.

Continue development with input from end users[694] to improve functionality and usability of the systems for users with varied levels of comfort and expertise with IT.

Promote common standards for data exchange at a provincial or national level, so that even if a software company fails, key data could still be transferred to another system. Canada Health Infoway and the Canadian Institute for Health Information established a Standards Collaborative in 2006 to create pan-Canadian standards for EHRs.[695]

Develop standards that specify how EMRs should capture, aggregate and export data related to quality measures.

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Root Cause

Concerns that true benefits will only be realized when other parts of the system are built and an EHR is realized. If other sites, such as lab or X-ray, cannot send data electronically, then staff may have to scan information into each individual EMR, which is inefficient.

Ideas for Improvement

Continue investments in disease registries, lab information systems, electronic prescribing systems and picture archiving and communications systems (PACS) for diagnostic imaging, as many other countries, and provinces such as Alberta, have done.[696, 697] Ensure that providers have high-speed Internet access so they can send and receive files.

What is Ontario doing?

MOHLTC is focusing on specific EHR-related initiatives, including:

- A diabetes registry that will help patients and healthcare providers control and manage diabetes more effectively to reduce associated complications and costs.
- An online medication management system that will minimize preventable adverse drug reactions.
- A single information system (the Ontario Laboratories Information System) that will allow all laboratory test information to be electronically exchanged among authorized practitioners and lab service providers.

In September 2010, Canada Health Infoway pledged $380 million to speed up implementation of EMRs.[698]

7.3 Healthy work environments

Healthy workplaces make an organizational commitment to safety, emphasizing proper safety training, providing appropriate equipment (e.g., lifts for moving patients) and carrying out regular inspections to maintain high safety standards. A safe, well-run workplace generally results in healthier staff, fewer work-related injuries and more satisfied workers — and research shows that satisfied, healthy healthcare workers are more courteous and less likely to make mistakes due to fatigue or stress.[699, 700]

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
The lowest possible injury rates for healthcare workers.	When staff are injured and can't go to work, those who cover for them have to manage a greater workload and often experience more stress. This, in turn, may boost staff turnover, disrupting continuity of care and increasing recruitment-related costs. It may become more difficult to attract well-qualified workers to the organization. In addition, as Workplace Safety and Insurance Board (WSIB) claims increase, premiums may rise.	Ontario's 709,000 healthcare and social services workers, who represent 9.9% of the province's workforce.[701] Their health matters.
The lowest possible absenteeism and inactivity rates for healthcare workers.	High absenteeism rates are disruptive to proper work scheduling and output, and costly to an organization and the economy as a whole. Absenteeism and inactivity can also be indicative of high worker stress and low job satisfaction.[702]	

Indicator	Value	Time trends & comparisons	Bottom line
Lost time and non-lost time injury rates per 100 full-time equivalent workers:			**After several years of little change, lost-time and non-lost-time injury rates dropped in 2009, for healthcare workers in all different settings. From 2008 to 2009, injury rates decreased by 7% in LTC, 5% in hospitals, 11% for nursing services, 14% for treatment clinics and 17% for professional offices and labs. These decreases are comparable to declines seen in injury rates across all industries in Ontario.[703]**
— LTC homes	8.3*		
— Hospitals[†]	4.7		
— Nursing services (home care and other settings)[††]	4.9		
— Treatment clinics[†††]	2.9		
— Professional offices and labs[††††]	1.9		**The reason for the drop in injuries in all workplaces is not clear, but lower claims are often observed during recessions.[704] This could occur because workers fearing job loss may avoid claims during recession, or because inexperienced workers are often the first to face work reductions and these individuals typically have a higher risk of injury. It will be important to verify whether the reductions in injury claims seen represent true improvements in safety or simply a recession effect.**
— Incidence of absences (percentage of workers who report being absent within the past week)[‡]	9.1%**		**Ontario healthcare workers report being absent from work 12 days per year and 9.1% of them had an absence in the past week. This rate is higher than the rate for the overall Ontario workforce (7.8%).[705] These rates for healthcare workers have changed little in the past four years and there is room to improve.**
— Inactivity rate (hours lost as a proportion of the usual weekly hours of all full-time employees)[‡‡]	4.9%		
Days lost per worker in year[‡‡]	12**		

Data sources:
*Workplace Safety and Insurance Board, 2009; this indicator represents the total number of injuries causing time away from work (lost time) or not (non-lost time, which includes cases where the employer provided modified work duties to accommodate a disabled worker) per 100 workers per year.
**Statistics Canada, special tabulation, unpublished data, Labour Force Survey, 2005 to 2009.
†Includes acute care, rehabilitation, psychiatric, paediatric and other specialty hospitals.
††Includes agencies that provide nursing, rehabilitation and personal support services (e.g., homemaking) for provincial home care programs, as well as hospitals or other organizations that need short-term staff to fill scheduling gaps. †††Includes clinics for mental health and addiction, rehabilitation and public health, as well as community health centres.
††††Includes offices of doctors, dentists, physiotherapists and other healthcare professionals, medical laboratories, radiology suites, and agencies for research, health promotion, worker safety or social service planning. ‡Includes absences of any length (e.g., an hour, day or week).
‡‡This takes into account both the incidence and length of absence. ‡‡‡Calculated by multiplying the inactivity rate by working days per year (250).

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Root Cause

Lack of knowledge about safety. Healthcare workers might not be fully aware of safety hazards in the workplace or ways to avoid them, including infection control standards.

Lack of "safety culture."[17] If safety culture is weak, then staff may skip safety procedures when they think they are inconvenient, take too much time, or are not important. Or, a poor culture may lead staff to avoid reporting safety issues due to fear of being punished. Staff then lose the chance to learn from their mistakes.

Unhealthy lifestyles can lead to more illnesses and more absenteeism.

Excessive workloads may lead to fatigue, stress or burnout,[16] which can also increase the risk of workplace accidents and absenteeism.

Lack of safety equipment. Staff do not always have access to equipment that could reduce their risk of injury from performing their duties. Environmental hazards innate to healthcare settings (e.g., sharps, infectious diseases) can also cause injury or harm.

High prevalence of shift work. Healthcare is a sector where employees frequently work shifts. There is a persistently higher risk of work-related injury for extended duration work shifts, particularly during the night.[72]

Ideas for Improvement

Educate staff and supervisors about hazards to their own safety and provide training to reduce their risk.[06] Educate staff and supervisors to look out for safety hazards (e.g., clutter, poor lighting and slippery areas) and pay closer attention to safe lifting protocols, appropriate use of safety equipment and infection control.

Conduct risk assessments. Have staff use standardized checklists to help them identify environmental hazards, repetitive motions that could lead to injury and faulty equipment.[07]

Prevent abuse towards staff.[08] Implement standard abuse protocols of zero tolerance. Have security available, provide panic buttons for staff at high risk, use a buddy system and teach conflict de-escalation techniques to staff.[09, 10, 11]

Provide visible leadership for workplace safety.[13] Set targets with deadlines for reducing workplace injuries and publicize these widely across the organization. Post frequently updated charts showing progress. CEOs and managers should "walk the shop floor" to talk about safety and listen to concerns.

Monitor safety statistics, such as injury rates, at the board level. The Duke Health and Safety Surveillance system was developed to help identify and track health and safety issues, as well as occupational diseases.[14]

Promote healthy lifestyles within the workplace.[15] Encourage activities like stretch breaks in meetings, healthy food choices for meeting snacks, vending machines and cafeteria food, pedometer or stair climbing challenges, bike to work campaigns and making bike lockers and/or showers available in the workplace. Offer tobacco cessation programs and universal flu vaccination.

Allow frequent breaks to ease fatigue, and give staff the opportunity to eat and drink to maintain energy.[17]

Consider how staff can be used more effectively to decrease time pressures on them. This could involve improving teamwork and work processes, eliminating unnecessary or redundant tasks, and improving role clarity.

Consider increasing staffing levels, but only after all efforts to increase efficiency are exhausted.

Ensure that adequate safety equipment is available to healthcare providers and staff and that they are trained in this equipment's proper use. For example, musculoskeletal injuries from heavy lifting (e.g., while moving a patient out of bed) are very common in healthcare.[18] Use mechanical lifts to assist with patient transfers. Needleless IV systems can help reduce needle stick injuries.[19] Consider ergonomic workstations to reduce injuries related to repetitive strain.[20, 21] Make sure all providers and staff have appropriate infection control training and materials (e.g., conveniently located sinks, gloves and masks).

Implement strategies to mitigate the effects of shift work.[73] Provide employees with information about sleep hygiene, and encourage strategies that can be used to reduce fatigue, such as napping.[74] Consider altering shifts to make them more compatible with circadian rhythms and provide adequate recovery time between shifts, especially when rotating off night shifts.[75]

What is Ontario doing?

- Bill 168, which amended the *Occupational Health and Safety Act* (OHSA) to prevent violence and harassment in the workplace, came into effect on June 15, 2010.[76] The final phase of the Needle Safety Regulation, which requires all healthcare workplaces to use safety-engineered needles, came into effect on July 1, 2010.[77] And the *Excellent Care for All Act*, which requires healthcare organizations, starting with hospitals, to develop worker satisfaction surveys, passed on June 3, 2010.[78]
- The Healthy Work Environments Innovation Fund Grant Program dedicated $2.8 million in FY 2009/10 to funding 18 projects, which developed tools and resources to promote healthy work environments.
- HealthForceOntario partnered with the Ontario Hospital Association in 2010 to launch the Quality Healthcare Workplace Awards, which recognize leadership in creating healthy and productive workplaces in Ontario.[79] HealthForceOntario also launched a social media initiative in the summer of 2010, including a Twitter feed (@HFO_HWE), to promote healthy work environments.[80]

7.4 Health human resources

It's clear that having enough staff is essential to deliver high-quality healthcare, but researchers and planners struggle to define the optimal number, mix and distribution. Variables include the demand for healthcare, model of care selected, worker productivity and number of hours staff are willing to work. As new models are developed and work is structured more efficiently, human resources targets can change. MOHLTC has not yet set any official planning targets in this area, so this report will not comment on whether greater supplies of professionals are positive or negative. It will, however, indicate whether Ontario appears to be moving towards more team-based care in primary care practices — an important factor when it comes to delivering excellent, efficient care.

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
The right number and type of healthcare practitioners available when Ontarians need them.	Too few healthcare practitioners may lead to increased wait times, more travel to get care and, in some cases, no access to certain services. Providers compensating for the shortfall may experience extra workload and stress.	Ontario's 13 million residents.

Indicator	Value	Time trends & comparisons	Bottom line
Number of entry-level student positions for:			**Over the past four years, the number of entry-level student positions in healthcare has steadily increased in Ontario. The greatest increases have been seen in the number of positions for nurse practitioners (76%), pharmacists (61%), midwives (41%) and registered practical nurses (52%). Further, the number of positions for international medical graduates has increased by 42% over the past four years.**
Registered practical nurses	3,226*		
Registered nurses	4,345*		
Nurse practitioners	176*		
Undergraduate medical students	876*		
International medical graduates entering post-graduate training and assessment†	221		
Canadian medical graduates entering MOHLTC-funded residency training	849**		
Pharmacists	387*		
Midwives	90*		
Supply per 100,000 people of:			**From 2005 to 2009, there has been an increase in the supply of family doctors (3.4%), specialists (6.4%) and nurse practitioners (83%) per 100,000 people. However, at present, there is only one nurse practitioner for every eight family physicians in Ontario. Also, large regional variations are present across the province in the supply of healthcare providers (see LHIN analyses, chapter 11).**
Family doctors	88**		
Nurse practitioners	11***		
Registered nurses	712***		
Registered practical nurses	231***		
Specialists	99**		
Percentage of physicians within the workforce who can provide professional services in French	16%§		**Close to 5% of Ontarians speak French.[731] Almost one in six Ontario doctors can provide services in French. In addition, 8.8% of many health professionals, such as dentists and optometrists, are also able to provide services in French.§ Thus, the proportion of healthcare providers who speak French is greater than the proportion of the Ontario population that is francophone. While this is encouraging, it will be important to verify that these French-speaking physicians are located where francophones live.** **In addition, almost one in five health professionals report being able to provide services in a language other than French or English.§**

Data sources:
*Entry-level student positions data provided by MOHLTC and MTCU for academic year 2009/10.
**Ontario Physician Human Resources Data Centre, 2009.
***College of Nurses of Ontario, 2010.
†College of Physicians and Surgeons of Ontario, Ontario Physician Human Resources Data Centre, 2009, calculated by HQO.
‡These data reflect only students funded by MOHLTC; MOHLTC has set a target of 200 registered international medical graduates per year, and continues to surpass this target.

HOSPITAL
LONG-TERM CARE
HOME CARE
PRIMARY CARE

What is Ontario doing?

- MOHLTC has created more than 10,000 nursing positions since 2003. In FY 2009/10, it exceeded its goal of creating 900 nursing positions.[732] Over the past seven years, MOHLTC also invested over $1 billion in initiatives to enhance education, recruitment and retention of Ontario nurses.[733]
- The Nursing Graduate Guarantee (NGG) program, launched in 2007, gives every Ontario nursing graduate the opportunity to work full-time in the province and 9,600 nurses have participated to date.[734]
- MOHLTC has named six French-language health planning entities to work with LHINs to ensure local health planning reflects Francophone communities' needs.[735]
- Ontario's first class of 21 Physician Assistants (PAs) graduated on November 19, 2010 from McMaster University,[736] and University of Toronto now also offers the two year Physician Assistant training program. Working under a medical doctor's supervision, physician assistants are now being deployed in family health teams, community health centres, emergency departments and hospitals.[737, 738]

8.1 Discharge/transitions from hospital and primary care

When Ontarians move from one provider or setting to another — for example, from a hospital back to the community — there is a risk that poor communication may lead to errors[39] that adversely affect patient care and health outcomes. To mitigate this risk, healthcare providers must share all key information in a timely fashion, and any necessary follow-up care must be arranged.

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
All relevant information provided to patients when they are discharged from a hospital or emergency department (ED) to their homes, including warning signs to watch for, side effects of new drugs and where to go if they have problems.	When patients don't receive or understand the information they need at discharge, they may not get proper follow-up or know what they need to do to take care of themselves. This increases the chance their health may get worse and they may have to return to hospital.[40]	Ontario's 20% of residents who visit an ED each year,[41] and the Ontarians who account for over one million hospital discharges each year.[42]
Follow-up by a physician within 30 days for patients discharged from hospital for mental health services.	After discharge, people with mental health conditions may return to stressful situations at home, or have side effects of their medication, or may stop their medications prematurely. Early follow-up helps identify these problems and address them before they escalate. Without follow-up, these individuals are more likely to end up back at hospital.[43]	The approximately 42,000 people in Ontario who were discharged from hospital for a mental health and addictions condition in FY 2009/10.[44]
Rehabilitation services for most patients after hospitalization for a stroke.[45]	When people recovering from a stroke don't receive rehabilitation services, they may have to live with worse speech or movement disabilities.[46]	Ontario's 90,000 people living with the effects of strokes.[47]

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of patients who knew:			**A large proportion of patients are not receiving the information they need upon leaving the hospital or ED. For example, only half of hospital patients know when to resume normal activities. Only half of ED patients know what danger signs to look out for at home. About one in three patients do not know what side effects of medications to look out for. These rates have not changed over the past three years (data available on request). There is huge room for improvement.**
Danger signals to watch for after going home			
Hospital	59%*		
ED	51%		
Purpose of medications			
Hospital	80%		
How to take medications			
ED	83%		
Side effects of medications to watch for			
Hospital	64%		
ED	70%		
When to resume usual activities			
Hospital	52%		
Whom to call if they needed help			
Hospital	80%		
ED	61%		

Data sources:
*NRC Picker patient satisfaction surveys, FY 2009/10, provided by the Ontario Hospital Association

HOSPITAL

LONG-TERM CARE

HOME CARE

PRIMARY CARE

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of adults who report their regular doctor/general practitioner practice seems informed about the care they received in hospital, including any new prescription medications	68%**		**Only 68% of adults in Ontario who had been in hospital felt that their regular doctor seemed informed about the care they received while in hospital. Internationally, Ontario is in the middle of the pack in this area, and the US has the best results, at 92%. There is major room for improvement.**
Percentage of adults who report their regular doctor/general practitioner practice seems informed and up to date about the care they received in an ED	61%**		**Only 61% of adults in Ontario who had visited an ED felt that their regular doctor seemed informed and up-to-date about the care they received while in the ED. Ontario and Canada have results that are similar to several other countries. This is a problem that persists around the world. There is major room for improvement.**
30-day post-discharge rate of physician visits per 100 people for: —●— Any mental health or addiction —○— Depression —✕— Schizophrenia or bipolar disorder	61*** 71 70		**Nearly four out of 10 patients are not receiving recommended follow-up with their primary healthcare physician within 30 days of discharge for a mental health or addictions condition. No major change has been seen in the past three years and improvement is necessary.**
Percentage of stroke patients discharged from acute care to in-patient rehabilitation	29%§		**Across Ontario, 29% of acute care stroke patients receive in-patient rehabilitation following their stroke. This is likely too low, as the percent of stroke patients who have a level of disability that typically requires in-patient rehabilitation is approximately 40%.[748] There has been no change in the past four years, and there is likely room for improvement.**

Data sources:
**Based on Commonwealth Fund International Survey of Adults, 2010.
***Discharge Abstract Database (DAD), Ontario Mental Health Reporting System, Ontario Health Insurance Plan (OHIP), Registered Persons Database (RPDB), FY 2009/10, calculated by Institute for Clinical Evaluative Sciences (ICES). Indicator methodology adapted from the POWER Report.[747]
§DAD, National Rehab System Database, FY 2009/10, calculated by ICES; includes only patients treated in stroke centres in Ontario.

8.1

Root Cause

Ideas for Improvement

Issue: Patients do not receive or understand discharge instructions.

Healthcare providers may forget to provide all relevant details about discharge care to patients.

Provide written discharge instructions for all hospital and emergency department patients.[750, 754] Duplicates should be made, with one copy given to the patient and the other kept in the chart. Use a standard sheet for certain common conditions (e.g., gastroenteritis, head injury), with room to add details unique to the patient. Structure the form to ensure that the key details (e.g., how to take medications, symptoms or side effects of drugs to look out for, or whom to call if things get worse) are always included.

Patients may be too stressed with their medical condition and forget discharge instructions when given.

Use the "teach back" method.[752, 753] Ask patients to repeat discharge instructions to verify that they understand them. If they don't, clarify errors and try again. Consider requiring staff to record in the chart whether the "teach back" confirmed understanding of written discharge instructions.

Staff explain instructions at a level of language that patients cannot understand, or patients don't understand English well.[754]

Have interpreter services available, with interpreters who are trained in medical terminology[755] for commonly spoken languages in the community. Also have information available in multiple languages that is written in plain language.

Provide patients and families with simplified instructions, using plain language; written material could also use pictures to reinforce instructions.[756]

Patients may receive different instructions from different providers.

Consider having **the most responsible physician in the hospital call the patient's family physician** to discuss a discharge plan, especially for complex internal medicine or mental health patients.

Patients and family members may feel uncomfortable asking questions to clarify instructions (see section 5.1).

Give patients and families a chance to ask questions.[757] Clarify misunderstandings and ask if there are any questions or if there are instructions that they will have difficulty following.

Root Cause	Ideas for Improvement
Issue: Discharge information is not received by primary care provider, or is incomplete.	
Some doctors don't dictate discharge summaries immediately after discharge. This slows the transfer of information to primary care providers, and may also contribute to information about hospital visit being incomplete.	**Try database-generated discharge summaries**, where much of the key information is captured using a standard form instead of traditional voice dictation. Studies show that in some instances, electronic discharge summaries are faster than dictating summaries, capture more useful information, and healthcare providers receiving the reports find them easier to read.[158, 159] **Track discharge dictation delays and feed data back to family doctors or healthcare providers.** **Set standards in hospital for discharge summary dictation delays.** For physicians who habitually delay discharge summaries, revoke hospital privileges as a last resort.
Delays in getting information to the healthcare provider.	**Use fax or secure e-mail instead of regular mail** to send out reports.[160] Ideally, **transmit this information electronically** from hospitals to electronic medical records in primary care offices. Use of a web-based standardized communication system to transfer information on patients' visits to emergency departments to family doctors makes transfer of information more timely and complete.[161] **Set standards and measure timeliness of information transfer between in-hospital provider and primary care provider.** One source recommends that diagnoses, medications, results of procedures, pending tests, follow-up arrangements and suggested next steps be communicated to primary care providers on the day of patient discharge, and detailed discharge summary be received by primary care physician within one week of discharge.[162]
Issue: Transfer to rehabilitation following stroke.	
Not enough spaces in rehabilitation facilities and outpatient rehabilitation options to accommodate stroke patients.	**Ensure the right capacity exists for stroke rehabilitation care.** This consists of specialized stroke rehabilitation units as well as outpatient rehabilitation programs.[163]

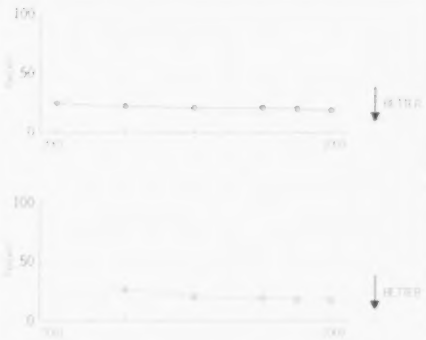
What is Ontario doing?

The Ontario Association of Community Care Access Centres (OACCAC) is in the process of implementing a survey to home care clients that will help track how well care is integrated from discharge to return back to home.

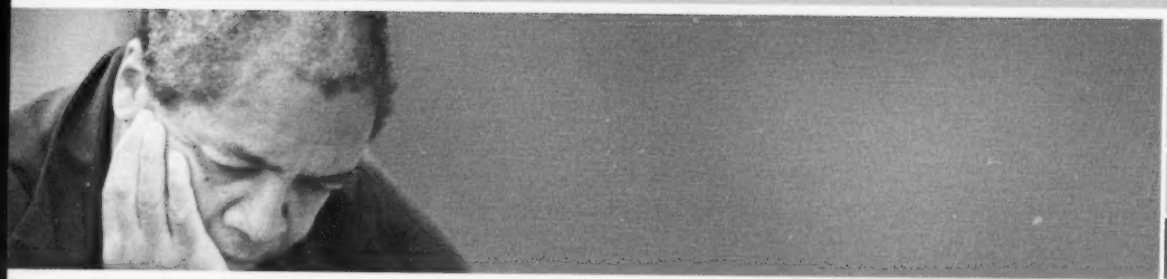
9.1 Unhealthy behaviour

The basis of good health is healthier behaviour.[767] That includes avoiding smoking and heavy drinking, maintaining good physical activity, preventing obesity and enjoying a healthy diet that includes a variety of fruits and vegetables. Adopting a healthy lifestyle is essential to avoiding chronic diseases later in life.[768] Improvements in health also require supportive environments, policies and resources that enable people to achieve their full health potential.[769]

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
No smoking or exposure to second-hand smoke.	Smoking raises the risk of cancer, lung disease, heart attack, stroke, emphysema, pregnancy complications and other conditions.[770] It kills more than 13,000 people in Ontario each year[771] and is the number one cause of premature mortality. Smoking also accounts for at least 500,000 hospital days per year.[772] Annual costs of smoking include $1.9 billion on healthcare and $5.8 billion in lost productivity[773].	Ontario's 13 million residents.
No heavy alcohol consumption.	Heavy alcohol use raises the risk of cirrhosis of the liver, pancreatitis and chronic gastritis (irritation and bleeding of the stomach),[774] as well as mouth, throat, esophogeal, colorectal and breast cancer.[775] It is also associated with a higher risk of injuries and violent behaviour.[776]	
Everyone at a healthy weight.	Obesity raises the risk of heart disease, stroke, diabetes, several kinds of cancer (including breast, colorectal, esophogeal, pancreatic, endometrial and kidney),[777] arthritis of the knee and many other conditions.[778] Ontario spends nearly $1.6 billion each year on obesity: $647 million in direct and $905 million in indirect costs.[779, 780]	
Everyone more physically active.	Physical inactivity raises the risk of cancer,[781] obesity, heart disease, diabetes, osteoporosis and sleep disturbances.[782] Ontario spends $1.8 billion each year on costs related to physical inactivity.[783, 784]	
Everyone eating enough fruits and vegetables.	Eating fewer than five servings of fruits and vegetables every day raises the risk of heart disease, stroke, obesity,[785] and stomach, esophogeal, lung and colorectal cancer.[786]	

Indicator	Value*	Time trends & comparisons	Bottom line
Percentage of the population: — Who smoke — Who are exposed to second-hand smoke	19% 18%		**Smoking rates in Ontario have decreased sharply over the past eight years, from 25% to 19%. This represents a 25% relative decrease. The rate of second hand smoking has decreased even more sharply, from 27% in 2003 to 18% in 2009. Anti-smoking laws passed at the provincial, municipal and federal level over the past 15 years have likely contributed to these declines. These laws include restrictions on advertising[787], sponsorship of events, sales to minors[788], smoking in the workplace, and graphic warning labels.[789] The 2006 *Smoke Free Ontario Act* extended smoking bans to all enclosed public places, including restaurants and bars.[790]** **Although smoking has declined, there is still room to improve. Ontario could aim to match BC's smoking rate (16%)[791] or Toronto's (13%). Toronto's success may possibly be due to its longer experience with anti-smoking bylaws (for example, it banned smoking in restaurants in 1999).[792] Those with low education, low income or who live in rural areas are much more likely to smoke (for example, 30% among those who do not complete high school). Efforts targeted to these groups could reduce smoking further (see section 10.2).**
Percentage of the population who have had binge drinking episodes†	22%		**More than one in five Ontarians report having had binge drinking episodes. There was a slight increase in this rate of from 2001 to 2003 but since then there has been no change. Ontario does have the lowest rate of heavy drinking in Canada,[793] but there is still room to improve. Men and rural residents are at greater risk, and efforts could be targeted to these groups (see section 10.2).**

Data source
* Canadian Community Health Survey; population represents respondents ages 12 and over; 2009; calculated by Institute for Clinical Evaluative Sciences.
† Defined as having five or more drinks on one occasion, at least once within the year.



Indicator	Value*	Time trends & comparisons	Bottom line
Percentage of the population who are obese[†]	18%		In 2009, 18% of Ontarians reported being obese. Because information is self-reported, the true rate is likely higher. Obesity has gotten slightly worse over the past eight years, and there is huge room to improve. Ontario could aspire to match obesity rates of 10% to 11% in Sweden, Norway, Italy, the Netherlands and France.[794] Obesity is higher among those without high school education (23%) and living in rural areas (22%; see section 10.2). While efforts targeted to these groups could help, the problem is so widespread that approaches directed to the entire population are also needed.
Percentage of the population who are physically inactive	49%		Half of Ontarians do not get enough physical activity. Because this information is self-reported, the true rate of physical inactivity is likely even higher. There has been no significant change over the past eight years and there is major room for improvement. Ontario is similar to the national average (48%), but much worse than B.C. (40%), and short of the target of 45% it declared in 2005.[795] Rates of physical inactivity are worse among those with lower education (70%) and low income (61%; see section 10.2). Efforts targeted towards these groups, as well as to the entire population are needed.
Percentage of the population with inadequate fruit and vegetable intake	56%		56% of Ontarians do not consume enough servings of fruits or vegetables every day (i.e. five or more). There has been no major improvement in this indicator since 2003. Ontario's results are similar to the national average but worse than Quebec's (46%).[796] There is room for improvement.

Data source:
*Canadian Community Health Survey, population represents respondents ages 12 and over, 2009, calculated by Institute for Clinical Evaluative Sciences.
† Defined as body mass index of 30 or more.

9.1

Root Cause	Ideas for Improvement
Harmful substances, particularly tobacco, are highly addictive.	Encourage the use of **nicotine replacement therapies (NRTs)** such as nicotine gum, sprays, patches or lozenges.[797] Consider increasing their access to all people regardless of drug coverage plans.
Poor health habits may be a social norm.	**"De-normalize" unhealthy behaviours.**[798] Smoking bans in public places are effective in reducing smoking.[799, 800] Similarly, consider **limiting unhealthy food choices** in school and workplace cafeterias[801] and remove junk food vending machines from schools.[802]
	Encourage healthy work environments. Employers can offer physical activity programs, workshops, classes and other resources at the workplace.[803] Employers can also serve fruits and vegetables at meetings instead of pastries and desserts.
Motivation issues and/or low self-esteem may exist. People may not be motivated to change, or may not feel as if they have the power to do so.	**Promote patient self-management**,[804, 805, 806] preferably through a counsellor with certified training in these techniques.[807, 808, 809] Patients learn about their condition and are coached into setting their own reasonable goals for improvement (e.g., "I'll start by losing two pounds in the next three weeks") that fit with their lifestyle (e.g.,"I'll have green tea instead of a double-double at my bridge game"). Then, they build gradually on each improvement.
Poverty and/or low education contribute to unhealthy behaviours. Individuals struggling with daily survival may not have the time or energy to maintain a healthy lifestyle.	**Develop targeted outreach activities** to low socioeconomic groups that help address their underlying challenges in maintaining healthy lifestyles. See section 10.2 for details.
Knowledge and awareness gaps exist. While most people know unhealthy behaviours should be avoided, they may not be aware of how different choices can affect their health, or the specific steps they need to follow.	Providers can **refer people to smoking cessation programs, smoking hotlines or healthy eating hotlines for more information (see page 101).**
	Give **"exercise prescriptions"**,[810] which tell patients precisely what frequency, intensity, type and duration of exercise they should follow, given information about their current fitness level.
	Dispel the myth that healthy eating is expensive. Promote low-cost healthy foods such as eggs, milk, potatoes, whole grain breads and pasta, oats, beans, apples, bananas, broccoli, spinach, watermelon and squash.[811]
	Display calorie and sodium content on menus in restaurants and school and workplace cafeterias, to help consumers make informed choices.[812]
	Simplify routines. Create written instructions in plain language or simple checklists (e.g., a shopping list of healthy foods, walking program) for patients to follow.
Unhealthy food choices are aggressively marketed.	**Create health promotion materials** including posters, pamphlets, videos and other educational materials that use simple wording and are available in multiple languages to meet patient needs.[813, 814] Post materials in healthcare settings, community centres, libraries and other public places where vulnerable populations meet.
Healthy choices may not be accessible.	**Enable healthy environments and active lifestyles** through community planning and development. Ensure neighbourhoods are safe and pedestrian-friendly, and that people from all income levels have access to recreational facilities.[815, 816] Keep physical activity and recreation an integral part of the school curriculum[817] (see section 10.2).

Root Cause

Healthcare providers are challenged to find time to discuss health behaviours.[818]

Ideas for Improvement

Use decision aids, flow sheets and computerized reminder systems[819, 820] to track health promotion activities.

Involve all members of the healthcare team (e.g. have nurses and health promotion educators offer lifestyle counselling.[821]

Try the **"Ask, Advise, Assist, Arrange" protocol** that nurses or other practitioners can use at every health encounter to counsel on smoking. This takes only three minutes to do.[822]

Ensure provider reimbursement systems encourage behavioural risk counselling and other prevention activities.

What is Ontario doing?

- EatRight Ontario (www.ontario.ca/EatRight, 1-877-510-5102) is a free telephone and e-mail service offering information about food and nutrition, meal planning advice, healthy eating tips and recipes.[823] The Canadian Cancer Society's www.smokershelpline.ca (1-877-513-5333) provides a similar service for smoking.[824]
- Promoting Life-skills for Aboriginal Youth (PLAY) is a pilot program developed by Right To Play, in partnership with the province and other organizations, to help Aboriginal youth improve their health, self-esteem and leadership skills through participation in sport and play activities.[825]
- In 2009, Ontario launched an after-school program to provide children in at-risk communities with nutrition and physical activity programs.[826]
- Beginning in spring 2011, participating family health teams (FHTs) will provide over-the-counter NRTs combined with counselling at no charge to patients who want to quit smoking.[827]

9.2 Maternal and infant health

In the development of a child, the time from conception to three years after birth is critical.[829, 830] During this time, both the mother's and infant's health must be carefully monitored, since problems that are left undetected or untreated may have consequences that last for years or for a lifetime.[831]

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
All steps are taken to avoid preventable infant deaths (e.g. avoid sudden infant death syndrome, injuries).	More infant deaths.	Ontario's approximately 138,000 women who gave birth last year and their families.[831]
Babies born with a healthy weight.	Low birth weight raises the risk of death at birth[832] and at all stages of life.[833] It may also result in learning difficulties,[834] high blood pressure, heart disease,[835] diabetes,[836, 837] asthma and hearing and vision problems[838] later in life.	
No smoking by pregnant women.	When pregnant women smoke cigarettes there is an increased risk of pregnancy complications and serious adverse fetal outcomes, including low birth weight, stillbirth, spontaneous abortion, decreased fetal growth, premature birth, placental abruption, and sudden infant death syndrome (SIDS).[839, 840]	
At least six months of breastfeeding after birth.	When mothers do not breastfeed for at least six months after their baby's birth, it may result in less bonding between mother and infant,[841] more infections and allergies[842] and possibly a greater risk of diabetes later in life.[843] In addition, breastfeeding mothers experience less ovarian cancer, breast cancer and osteoporosis.[844]	

Indicator	Value	Time trends & comparisons	Bottom line
Infant mortality rate[†] (per 1,000 infants)	5.2*		**Infant mortality has been steady in Ontario over the last several years at 5.2 deaths per 1,000. This rate is higher than the rate of 4.0 in B.C.[845] and 2.5 to 2.7 in Japan, Norway, Sweden and Finland.[846] There is room to improve.**
Percentage of babies with low birth weight	6.2%**		**In Ontario, close to one in 17 babies are born with a low birth weight, weighing less than 5.5 pounds. In 2007, Ontario tied with Nunavut for the third-highest rate of low birth weight babies in Canada, behind Alberta (6.5%) and Yukon (6.4%). This rate has increased by one-tenth over the past seven years. This may be due to an increase in maternal age, the use of assisted reproductive technology, and multiple births.[847, 848]**
Percentage of women who smoked during their pregnancy	12%***		**About one in eight women smoke during their pregnancy. No change has been seen in the past three years. There is substantial variation within the province (with Central LHIN having the lowest rate at 4%). This suggests that there is room for improvement.**
Percentage of mothers breastfeeding: — Initiation — Exclusively for six months	 88%[§] 23%		**Almost nine in 10 new mothers initiate breastfeeding after birth. However, many women stop breastfeeding too soon. Only one in four continue to breastfeed their babies exclusively for six months after birth, as recommended by the World Health Organization.[849] Breastfeeding rates have decreased in the past year, and Ontario lags behind the national average and BC's rate (34%).[850] There is room to improve.**

Data sources:
[†] Statistics Canada. 2008. CANSIM table 102-0504. Infant mortality rate is the number of deaths of children less than one year of age, per 1,000 live births.
[‡] Statistics Canada. CANSIM table 102-4005. Low birth weight (less than 2,500 grams) and borderline viable birth weight-adjusted low birth weight (500 to less than 2,500 grams), by sex, Canada, provinces and territories, annual.
[**] Niday Perinatal Database, provided by BORN Ontario. FY 2009/10.
[§] Statistics Canada. 2009. CANSIM table 105-0501. [*] Includes infant deaths occurring at one year of age or younger.

Root Cause	Ideas for Improvement
Issue: Infant mortality.[851]	
Parents are unaware of, or do not take steps to avoid sudden infant death syndrome (SIDS) or preventable injuries.	**Provide public education for parents** on use of restraints in equipment such as strollers and high chairs; proper use of car seats; and how to baby-proof the home. For SIDS, tips include sleeping on the infant's back, eliminating second-hand smoke and clutter in cribs and avoiding overdressing.[852] Public education can be provided by public health units, primary care and prenatal classes. **Clinical aids** such as the Rourke Baby Record[853] remind healthcare providers to ask about and record key information at each visit, including safety issues.
Low birth weight.	**See below.**
Complications at pregnancy.	**Ensure good pre-natal care** to reduce complications such as Group B Strep infections or sexually transmitted diseases passed on to infant. Identify and address problems with addictions, poor nutrition or risky health behaviours.
Congenital anomalies.	**Screen for congenital anomalies in pregnancy.** If the pregnancy is continued, the information may help anticipate problems at delivery.
Health inequities. Infant mortality is higher in aboriginal communities[854, 855, 856] and mothers with low education[857] or income.[858, 859]	**Consider targeted outreach programs,** with education materials on safety tailored to these groups. Providers can seek out individuals at risk to encourage them to attend pre-natal care visits, or call them if they have missed appointments.
Issue: Low birth weight.	
More pre-term babies being born, due to increased use of fertility treatments, particularly by older women, that lead to multiple births.[860]	Consider **educating the public about the risks of delayed childbirth** to help women and families make informed decisions. Finding ways to **support women to have their children earlier without adversely affecting their careers** could reduce the need for fertility treatment.
Poor maternal health, or poorly controlled chronic diseases like diabetes.	**Ensure universal access to primary care services** (see section 2.2). Offer prenatal care programs targeting the specific needs of their populations, as many Community Health Centres have done.[861, 862]
Smoking and drug addictions.	Ask about addictions and offer **counselling**.
Poor diet, which is more common in women with low income or education level (see Section 10.2).	Provide **nutrition outreach programs** that offer dietary education and supplements to disadvantaged pregnant women. The Canada Prenatal Nutrition Program (CPNP) funds such programs.[863]
Issue: Low rates of breastfeeding.	
People are unaware of recommendations for exclusive breastfeeding to six months (instead of four, as previously recommended).[864]	**Ensure educational materials have been updated** to reflect the new recommendation of six months. Consider embedding **reminders in electronic medical records** to healthcare providers to continue advocating breastfeeding to six months.
New mothers may struggle or become discouraged with breastfeeding.[865]	**Provide access to lactation consultants, clinics or home visits** to help mothers with proper latching technique and suggest remedies for complications like sore nipples or mastitis.[866, 867] **Spread the word about breastfeeding support groups** (e.g., La Leche League).[868]
Lack of public acceptance of breastfeeding in public places and the workplace.	**Encourage public places (e.g. shopping malls) to provide private spaces for breastfeeding, and employers to offer breaks and quiet places for women to pump breast milk.**[869]

What is Ontario doing?

- Midwives attended more than 10% of births in Ontario in FY 2009/10, assisting about 14,400 women.[870]
- In partnership with the Breastfeeding Committee for Canada, the Ontario Breastfeeding Committee is implementing the World Health Organization/ UNICEF Baby-friendly Hospital Initiative (BFHI), helping hospitals and community health services achieve the baby-friendly designation.[871] The BFHI includes a course for maternity staff and tools for self-appraisal, monitoring and reassessment.[872]

9.3 Sexual health

Sexual health, according to the World Health Organization, is "a state of physical, emotional, mental and social well-being related to sexuality."[8/1] It requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence.[8/2] This section focuses on three sample indicators of sexual health. In future reports, HQO plans to provide a broader perspective on this important topic.

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
A reduction in the incidence of sexually transmitted infections, including gonorrhea, syphilis and HIV.	Left untreated, gonorrhea can lead to pelvic inflammatory disease (PID) in women, which can lead to chronic pelvic pain and scarring of the fallopian tubes, infertility and increased risk of ectopic pregnancies.[8/5] Infections can lead to male infertility.[8/6] Syphilis starts as an open sore and may be followed by rashes, fever, and muscle and joint pain. Later on, syphilis can damage the brain, blood vessels, heart and bones, and eventually lead to death.[8/7] HIV is a chronic infection impairing the immune system and can lead to infections,[8/8] cancers,[8/9] dementia,[9/10] other major physical impairments, and AIDS.[9/11]	All Ontarians benefit (including those who are sexually active) from the reduction in incidence as the burden of these infections on the healthcare system is reduced.
A reduction in teen pregnancies.	For teens, pregnancy is associated with an increased risk of anemia, high blood pressure, eclampsia and depression.[9/12] Teen mothers are more likely to drop out of school, be on social assistance and live in poverty.[9/13] In addition, teen pregnancies have an increased risk of low birth weight and pre-term birth. For babies, this can lead to a higher risk of death, developmental problems, learning difficulties, hearing and visual impairments and chronic respiratory problems.[9/14] When they grow up, the children of teen mothers are also at greater risk of becoming teen parents themselves, perpetuating the cycle of teen pregnancy.[9/15]	Ontario's 409,000 females aged 15 to 19.[9/16]

Indicator	Value	Time trends & comparisons	Bottom line
Gonorrhea rate per 100,000 people	27*		**In 2009 there were approximately 3,500 confirmed cases of gonorrhea. The majority of these cases were among those aged 15 to 34, although the peak age for men starts later than women. No major change has been seen in the past five years. Improvement is necessary.**
Infectious syphilis rate per 100,000 people	6.0*		**There were nearly 800 confirmed cases of infectious syphilis in 2009. More than 95% of the cases were men, and of those more than half were aged 25 to 44. This rate has increased over the past five years and improvement is necessary.**
HIV incidence per 100,000 people	7.8**		**Slightly more than 1,000 Ontarians were diagnosed with HIV last year. There has been an 18% decrease in HIV incidence over the last five years in Ontario. According to the UN, declines in HIV incidence have also occurred around the world.[9/17] The reasons for this are not clear; one possibility is that at-risk populations are taking greater precautions (e.g., safe sex). Although these improvements are welcome, there are still huge opportunities to reduce HIV incidence further.**

Data sources:
*Public Health Division, MOHLTC, 2009; **Public Health Laboratory Toronto, Ontario Agency for Health Protection and Promotion, 2009.[9/18]

Root Cause

Lack of knowledge about sexual health. People may lack information, skills and attitudes necessary to make decisions that promote and maintain their sexual health and prevent unintended pregnancies and sexually transmitted infections.

People, particularly young people, may feel invulnerable and may underestimate the risk[889] of sexually transmitted infections and unwanted pregnancy — **the "It'll never happen to me" attitude.**

Lack of communication between partners. People may feel uncomfortable, embarrassed or fearful of talking openly about sex with their partners.

The unique sexual health education needs of specific "hard-to-reach" groups are not being met.

Behavioural/psycho-social factors may predispose people to engage in risky sexual behaviours. These include lack of confidence and low self-worth, past abuse, abusive relationships and mental illness.

Lack of access to contraception. If young people cannot afford contraception or do not know where to get it without embarrassment, they may forego contraception.

Unknown spread of infection in the community. Infections that remain undetected will be spread further. Infections could also remain undetected if persons diagnosed with infections are reluctant to tell healthcare providers who their sexual partners have been. Without that information, public health officials can't track down partners to have them tested.

Ideas for Improvement

Provide access to comprehensive, relevant and accurate sex education in an age-appropriate, culturally sensitive manner that is respectful of individual sexual diversity, abilities and choices.[890] This education has historically occurred in schools and community settings with positive results.[891] Also consider public awareness campaigns (e.g., radio, television, billboards) and online information, which potentially offers greater anonymity and more current, interactive information than pamphlets (see the Society of Obstetricians and Gynaecologists of Canada's "Sexuality and U" site).[892]

Prepare parents to talk openly with their children about sexual health.[893] Specific tips include talking to their children about sex early and often, always knowing where their teen is, knowing their teen's friends and families, encourage group activities over frequent dating, strongly discouraging their teen from dating someone who is more than two years older, knowing what their teen reads, watches or listens to, and be aware of inappropriate sexual messages in popular media.[894]

Strengthen skills in decision-making and assertive communication. This involves increasing awareness of the benefits of taking action to promote sexual health and reducing negative outcomes. Involve individuals in the decision-making process so their values, needs and concerns are integrated in the effort to avoid being pressured into unwanted sexual activity.[895]

Ensure that educational material and programs address the needs of "hard-to-reach" groups such as new immigrants, First Nations, Inuit and Métis communities, or individuals who have experienced sexual coercion or abuse.[896] Encourage coordination and collaboration among federal, provincial and local agencies providing these services. Address the sexual health education needs of lesbian, gay, bisexual, trans-identified, two-spirited or queer people.[897]

Provide programs to address low self-esteem and depression, including psychotherapy, counselling and activities to help individuals connect with their family, school, community activities or volunteer work.

Offer prevention programs for illicit drug use, which is associated with risky sexual behaviour.[898]

Promote strategies to prevent dating violence and sexual abuse. Dating violence can lead to unwanted sexual activity, which can lead to sexually transmitted infections and unplanned pregnancy. Strategies include identifying those at risk for sexual violence (e.g., history of abuse in the family, low self-esteem) and educating teens that abusive behaviour should not be considered the norm.

Ensure access to contraception, especially for people who may not have regular access to primary care. Some health clinics provide free contraception (e.g., birth control pills) to those who cannot afford it and/or those who may not feel comfortable accessing it because of cultural reasons.

Ensure young women have regular pelvic exams to screen for sexually transmitted diseases along with Pap tests (see section 9.4 for specific ideas).

Deliver treatment and follow-up for people with sexually transmitted infections and their sexual partners to reduce further spread of infection.[899] Strategies to encourage people to name sexual partners include emphasizing the importance of contact tracing, respecting any wishes for anonymity, and listening to and addressing any concerns about possible violence or retribution if reporting of partners takes place.

What is Ontario doing?

- MOHLTC funds more than 90 programs and services across the province to deliver HIV/AIDS prevention, education and support to people at highest risk or those affected by HIV/AIDS. Anonymous HIV testing, point-of-care HIV testing and prenatal HIV testing are available in communities across Ontario. Seventeen HIV clinics across the province provide multi-disciplinary care for people living with HIV/AIDS, and two housing programs — Casey House and Fife House — offer supportive housing and hospice care.[900]
- The AIDS & Sexual Health Info Line provides province-wide information, counselling and referral for individuals who are seeking help.[901]
- MOHLTC provides 75% funding to boards of health across Ontario to provide necessary public health programming to prevent and control sexually transmitted infections and promote healthy sexuality for priority populations, cases and contacts. Under the Ontario Public Health Standards, the board is required to provide clinical services to priority populations, contraceptives, pregnancy tests, comprehensive pregnancy and post-abortion counsellings, free harm-reduction supplies and other services related to sexually transmitted infections and blood-borne infections.[902]

9.4 Preventive measures

Preventive measures contribute to keeping the population healthy. For example, vaccinations protect against infections and screening tests can detect diseases early so they can be treated before they become more severe or incurable.

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
Flu vaccinations for everyone, especially the elderly.	Without protection from flu vaccinations, more Ontarians will be infected with influenza, which can lead to hospitalization and deaths in a proportion of ill people,[903] and Ontario will incur increased healthcare costs.	Ontario's 13 million residents, especially the elderly and people with chronic diseases.
Screening for breast, cervical and colorectal cancers (mammography, Pap test and fecal occult blood test, respectively) for everyone eligible.	Without cancer screening, more Ontarians will experience premature death[904, 905] and suffering caused by the treatment of advanced cancers, and Ontario will incur increased healthcare costs and the economic burden of lost productivity.	Ontario's residents who are at risk for breast cancer (women aged 50 to 69), cervical cancer (women to age 69) and colorectal cancer (men and women aged 50 to 74). Within a lifetime, one in nine women get breast cancer [906] and one in 15 men and women get colon cancer. [907]
Screening for osteoporosis for everyone eligible.[908]	Without osteoporosis screening, more Ontarians will experience fractures that may cause disability, pneumonia, death, hospitalization and/or admission to long-term care (LTC) homes, and Ontario will incur increased healthcare costs.[909, 910]	Ontario's women over age 55 and elderly men with certain risk factors.

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of the population aged 65 and over who reported having a flu shot in the year prior to the survey	72%*		**In 2009, 72% of the population reported getting a flu shot in the past year. This represents a decrease from 2005, when Ontario recorded its best performance (78%). Ontario is tied with Nova Scotia for having the best results in Canada,[911] and has rates similar to the better performers among OECD countries (UK, Korea and Mexico).[912] Places with the best results are Chile (82%)[913] and one region in Nova Scotia (80%)[914]. There is still room for improvement.**
Percentage of Ontario women aged 50 to 69 who had a mammogram within a two-year period	67%**		**Approximately two-thirds of women aged 50 to 69 had a mammogram in the past two years. This has increased by a tenth over the past seven years.** **Nearly three-quarters of adult women had a Pap test in the previous three years. There has been minimal change in the last seven years.** **There is room for improvement in both areas. Ideally, nearly all eligible women should have these tests.**
Percentage of Ontario women aged 20 to 69 who had a Pap test within a three-year period	73%***		
Percentage of people aged 50 to 74 who reported having a fecal occult blood test (FOBT) within a two-year period	35%*		**More than one in three people aged 50 to 74 received screening for colorectal cancer with an FOBT test in 2009. In the last four years, these rates have improved from 21% to 35%. This change is likely due to Ontario's Colon Cancer Check program, which was implemented in 2008.[915] Ontario has seen a steady increase in this indicator since this time and is progressing towards its target of 40% by 2011.[916]**

Data sources:
* Canadian Community Health Survey, 2009, calculated by Institute for Clinical Evaluative Sciences (ICES). Self-reported rates tend to overestimate actual rates; therefore, the true rates may be lower.
** Ontario Breast Screening Program, Ontario Cancer Registry (OCR), Ontario Health Insurance Plan (OHIP), Registered Persons Database (RPD), 2008–2009, calculated by ICES, provided by Cancer Care Ontario (CCO).
*** Cytobase, OCR, OHIP, RPD, National Ambulatory Care Reporting System Database, Discharge Abstract Database, 2007–2009, calculated by ICES, provided by CCO.

Indicator	Value	Time trends & comparisons	Bottom line
Percentage of women aged 65 who had a bone mineral densitometry test since turning 55	81%[9]		**Approximately one in five elderly women did not receive screening for osteoporosis in FY 2009/10. That said, there has been major improvement over the last seven years, amounting to a steady increase from 58% to 81% in the number of older women tested. Progress has slowed in the past year, and there may still be room for improvement.**

Data sources:
[9]OHIP, Statistics Canada Population Files, RPD, FY 2009/10, calculated by ICES.

Root Cause

People are unaware of, or forget when, they need screening.

People are unaware of the importance of prevention activities, or overestimate risks (e.g. flu vaccinations).

Ethno-cultural barriers.[923] Different cultures may associate examination of sexual organs with **shame or embarrassment**. Some cultures may have **myths about screening** (e.g. Pap screening is not necessary after childbirth).[924] **Language barriers** may make it difficult to explain the purpose of the test. Some cultures separate men and women outside of family.[925]

Low-income and education is associated with lower rates for prevention activities.

Patients avoid having preventive procedures because they are uncomfortable.

Healthcare providers have competing demands on their time and may be too busy or may forget to do preventive screening measures.

People do not have access to primary care, where many preventive services are given.

Ideas for Improvement

Develop provincial registries to remind people about routine prevention activities. Currently, the Ontario Breast Cancer Screening Program[917] and ColonCancerCheck[918] send written reminders to people who are due for screening. Research suggests such reminders are well-received by patients.[919, 920] These programs could be expanded to other preventive activities.

Launch public awareness campaigns to encourage screening.[921] Use different media (pamphlets, posters, videos, and advertisements) to deliver the message. Use easy-to-understand language tailored to the target population.[922]

Always give patients the choice of a male or female healthcare provider for doing a preventive health test.

Prepare **culturally sensitive educational materials in different languages.** Specific ideas include using credible voices from the target community to deliver the message; addressing myths directly; and acknowledging feelings of embarrassment while promoting the benefits of the test.

Consider targeted outreach programs. See section 10.1 for details.

Follow **best practices for reducing discomfort of procedures. Explain each step of the process**[926] before and again during the procedure to reduce anxiety. For Pap tests, ensure the speculum is at an appropriate temperature and use padded stirrups or no-stirrup techniques.[927]

Use electronic medical records (EMRs) to generate reminders to call the patient in when he or she is due for a screening test.[928] Use EMR data to **provide primary care practices with feedback** on how well they are doing on preventive screening and vaccination.[929]

Instead of doctors, **have other health professionals do preventive screening.**

Improve access to primary care (see section 2.2)

Provide access to vaccinations outside primary care offices, such as vaccination clinics in public health units, workplaces, or public places like shopping malls. Give priority to high-risk people.

Bring screening to patients. For example, the Ontario Breast Cancer Screening Program has a van that serves small communities in northern Ontario.[930]

What is Ontario doing?

- Cancer Care Ontario's Ontario Cancer Plan 2011–2015 indicates that by 2015 Ontario will have an integrated cancer screening strategy for breast, cervical and colorectal cancer, supported by a single information management/information technology system.[931]
- MOHLTC offers vaccination information fact sheets in 22 languages other than English and French.[932]

9.5 Deaths and harm that could be avoided by prevention

Many deaths and much harm can be avoided through healthier lifestyles,[937] early detection of cancer,[938] improved mental health status[939] and injury prevention activities.[936] By maximizing these opportunities for prevention, Ontario can have a healthier population and reduce healthcare costs.

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
Diseases related to unhealthy habits such as smoking (including lung cancer and heart attacks) minimized.	Unless Ontario addresses preventable diseases and injuries, more Ontarians will experience disability, death, lost time from work and hospitalization, and the province will incur increased healthcare costs.	Ontario's 13 million residents.
Preventable injuries (including traffic accidents, falls, sports injuries and worker injuries) avoided.[937]		
Deaths from cancer where early detection is possible (including breast and colorectal cancer) minimized.		
Suicides and intentional self-harm minimized through community awareness, early recognition of warning signs and access to mental health services and social supports.	Suicides and intentional self-harm have a devastating impact that extends beyond the individual to the family and community. In addition, one suicide could trigger others.[938]	Ontario's 13 million residents, especially those experiencing depression,[939] schizophrenia[940] and substance abuse.[941]

Indicator	Value	Time trends & comparisons	Bottom line
Lung cancer incidence per 100,000 people:			**In 2007, approximately one in 2,000 Ontarians developed lung cancer. Incidence rates among men have declined dramatically in the last three decades. Among women, there was a gradual increase from 1982 to 1998 but rates have been stable since then. The overall decrease in lung cancer is likely due to declines in smoking (see section 9.1), but there is still major room for improvement as smoking has not yet been eliminated.**
—⁎— Overall	51*		
—●— Males	60		
—●— Females	44		
Relationship between lung cancer incidence and smoking rates			**There is a strong relationship between smoking and lung cancer. For every 5% increase in the percentage of people who smoke within a LHIN, there is an associated increase in the rate of lung cancer incidence of 10 per 100,000 people within the same LHIN.**
—●— Breast cancer mortality rate per 100,000 females	22*		**In 2007, there were 1,951 deaths due to breast cancer in Ontario. In Ontario, the rate of female breast cancer mortality has decreased over the past two decades, likely due to better treatments.[942, 943]**
—●— Colorectal cancer mortality rate per 100,000 people	19*		**In 2007, there were more than 3,100 deaths due to colorectal cancer in Ontario. In the past 25 years, the rate of colorectal cancer mortality has decreased by 33%. Screening has the potential to improve survival and further reduce mortality rates, so there is still room for improvement.**

Data sources:
* Cancer Care Ontario, 2007.

Indicator	Value	Time trends & comparisons	Bottom line
Acute myocardial infarction (AMI) incidence per 100,000 people aged 20 and over	197**		Approximately 21,000 Ontarians aged 20 and older were diagnosed with a heart attack last year. The incidence of heart attack has decreased by 23% over the past seven years, and decreases in smoking likely contributed to this trend. There is still room for improvement; lowering Ontario's AMI rate to what has already been achieved in Toronto Central LHIN (149) would create enormous benefits.
Relationship between AMI and smoking rates			The relationship between heart attacks and smoking is strong. For every 5% increase in the percentage of people who smoke within a LHIN, there is an associated increase in the rate of the heart attacks of 50 per 100,000 people within the same LHIN.
Rate of intentional self-harm (suicide) per 100,000 people: Overall Males Females	 8.0*** 12 3.9		In 2007, approximately 1,000 Ontarians committed suicide. Suicide rates are three times higher among men than women. The tracking of suicide is poor, and suicides may be underreported. While Ontario has the second lowest suicide rate in Canada (the Yukon's rate being 7.1)[944], there has been no change in the suicide rate in the past seven years. There is room for improvement in reporting and preventing suicide.
Rate of emergency department visits for intentional self-harm per 100,000 people aged 12 and over	88[§]		There was just under one emergency department visit for intentional self-harm per 1,000 Ontarians aged 12 and older in FY2009/10. Even though there has been a 24% decrease in this indicator in the last seven years, there is still room to improve.
Rate of injury-related emergency department visits per 100,000 people Rate of injury-related hospitalizations per 100,000 people	8,845[§] 404[§§]		In FY 2009/10, there were about nine emergency department visits for injury per 100 Ontarians, and about four hospitalizations for injury per 1,000 Ontarians. There has been a minor decrease in these rates over the past five years. There is still room for improvement.

Data sources:
* Discharge Abstract Database (DAD); Registered Persons Database (RPD); FY 2009/10; calculated by Institute for Clinical Evaluative Sciences (ICES).
** Statistics Canada, CANSIM table 102-0552: Deaths and mortality rate, by selected grouped causes and sex, Canada, provinces and territories, annual.
§ National Ambulatory Care Reporting System Database (NACRS); RPD; FY 2009/10; calculated by ICES.
§§ DAD; NACRS; RPD; FY 2009/10; calculated by ICES.

9.5

For strategies to avoid deaths or injuries related to unhealthy behaviours (e.g., lung cancer and heart attacks), see section 9.1. For strategies to avoid deaths related to early detection (e.g., breast cancer), see section 9.4.

Root Cause

Ideas for Improvement

Issue: Suicide or intentional self-harm.

People may not seek help because of stigma of mental illness. They fear being ostracized or losing their job if others know they have a mental illness.

Public anti-stigma campaigns can inform the public that mental health issues are far more common than they realize and can counter common stereotypes (e.g., that mental health sufferers are dangerous or irresponsible[945]). One grassroots campaign in the US lobbies local broadcasters and advertisers to stop using these negative stereotypes.[946]

Warning signs go unnoticed. Family, friends and colleagues may not recognize mental health issues until it is too late.

Develop screening tools to identify risk factors, warning signs and at-risk behaviours. High risk individuals can then be referred to counselling or other services. Some school-based programs have trained staff to identify students at risk.[947] Similar tools exist for the military.[948] Consider other tools for parents, family members, friends, co-workers, and healthcare providers.[949]

People have difficulty accessing mental healthcare. They may not know where to seek care, wait too long to get into a program, or get sent to wrong programs before finding the right one.

Ensure access to a primary care provider (see section 2.2.)

Publicize suicide hotlines and crisis services.

Consider **centralized intake programs** or a "one-stop-shop" referral system for all mental health and addictions services within a region. Such programs help match the individual with the most appropriate service (e.g., psychotherapy, counselling, group therapy, peer support groups or substance abuse programs) and eliminate the need for individuals to make multiple phone calls to different programs. This approach successfully reduced wait times for services in Thunder Bay.[950]

Ensure there are programs designed for vulnerable populations and the capacity for these programs matches the demand. People at increased risk of suicide include youth,[951] the elderly, victims of abuse, prison inmates, sexual minorities and those who have previously attempted suicide.[952] Aboriginal communities are at particularly high risk.[953]

Unemployment, poverty or lack of housing may create stresses that lead to suicide.

Ensure equitable access to social services and case managers. These services can help the individual find safe, affordable housing, assistance with employment or training, or social assistance.

Social isolation can lead to loneliness and suicide. **Weak communities** without a sense of hope can lead to despair.

Build strong and supportive communities. There is growing evidence that "community engagement" may help reduce suicides.[954] Examples in Inuit communities include establishment of anti-suicide youth associations, community suicide prevention walks, and youths kayaking to peers in other communities to deliver a "Live Life" message.[955]

"Copycat suicides." Cluster suicides have been noted in adolescents[956] and First Nations communities.

Encourage responsible media coverage; avoid sensationalizing suicides in the media to prevent copycat incidents.[957]

Ensure community intervention after a suicide occurs. Such interventions may include counselling for community members or use of traditional healers in First Nations communities.[958]

Root Cause	Ideas for Improvement
Issue: Injuries.	
Sports injuries.	**Support sports injury prevention programs.** For example, *Think First* is a national non-profit organization that works with public health units and community sports and recreation organizations to help children and youth understand how to prevent common and serious injuries associated with hockey, cycling, soccer, diving, skiing and snowboarding.[959] **Consider mandating use of safety equipment.**
Falls among the elderly.	See section 4.5 and 4.6 for strategies to reduce the risk of falls in LTC homes, home care and the community.
People injured on the job.	See section 7.3 for change ideas related to healthy work environments.
Traffic-related injuries.	**Promote safe driving** through awareness campaigns and public policy. Enforce or strengthen existing traffic safety laws that target drinking and driving[960], using cell phones while driving and improper use of car seats for infants and children. Better municipal planning can decrease traffic-related injuries, by building roads with traffic-calming features in areas with heavier pedestrian traffic.[961]
Assaults.	**Help healthcare providers identify people at risk of intimate partner violence.** While there is debate among experts on how frequently this should be done,[962] healthcare workers may ask brief questions during routine physicals and consider using certain assessment tools for people at higher risk.[963, 964, 965, 966] Ensure **healthcare providers are aware of and refer individuals to community supports when violence has been detected.** **Ensure safety for workers at risk of assault (e.g. cab drivers, delivery persons, healthcare workers).** This includes safety training, access to panic buttons, or special equipment (e.g. physical barriers in cabs).
Accidental poisonings.	**Promote child safety** during primary care visits and during vaccination of infants (see section 9.2).[967]

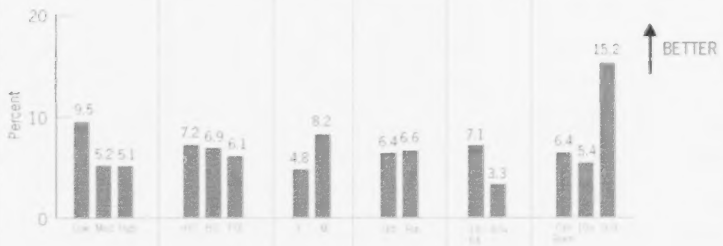
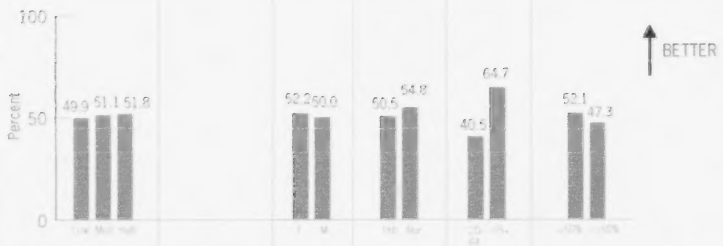
What is Ontario doing?

- Cancer Care Ontario's Ontario Cancer Plan 2011–2015 aims, by 2015, to develop an integrated cancer screening strategy for breast, cervical and colorectal cancer, supported by a single information management/information technology system, and to provide primary care providers with reports, tools, mentorship and supports to enhance their screening performance.[968]

10.1 Primary care — access and effectiveness

People should be able to access the health care services they need without any difference based on their income, education level, age, sex, location, or whether they are immigrants or born in Canada. This section examines whether healthcare in Ontario is equitable, with a focus on access to primary care, appropriate chronic disease monitoring, unhealthy behaviour, preventive measures, and diseases that could be avoided with a population health focus.

What do Ontarians want?	What if it doesn't happen?	Who benefits most?
No barriers accessing high-quality care because of income, education level, age, sex, urban or rural residence, or whether someone is an immigrant or born in Canada. All Ontarians living healthy lifestyles, regardless of who they are.	Health can deteriorate when people who are disadvantaged in society do not get the services they need or engage in unhealthy behaviours. A vicious circle may start as declining health leads to lower income or under-employment and these people may become more disadvantaged and reliant on social assistance. This is bad for the individual and also for family members and dependents. Employers may be affected, too, as worsening workforce health leads to more sick time and/or staff turnover.[9,9]	Ontario's 13 million residents.

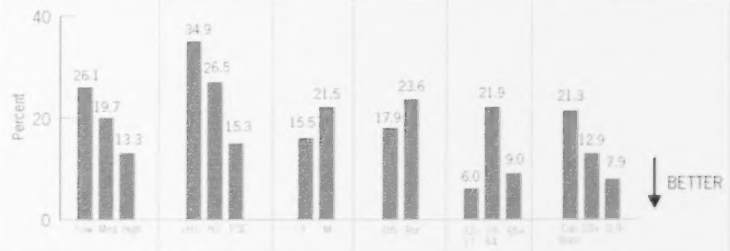
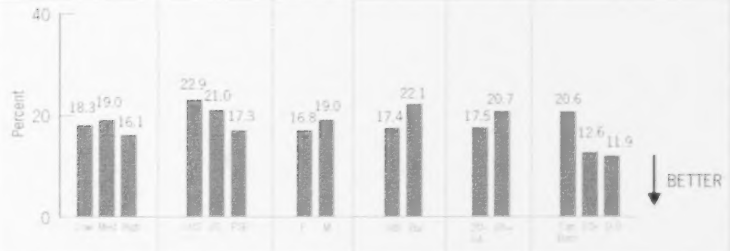
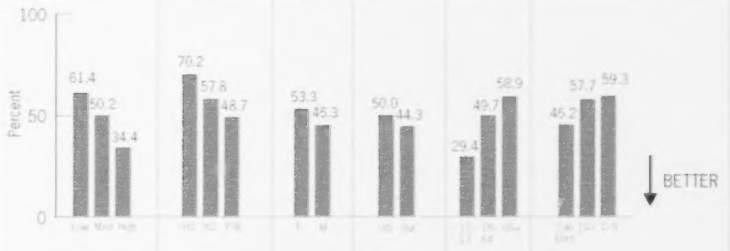
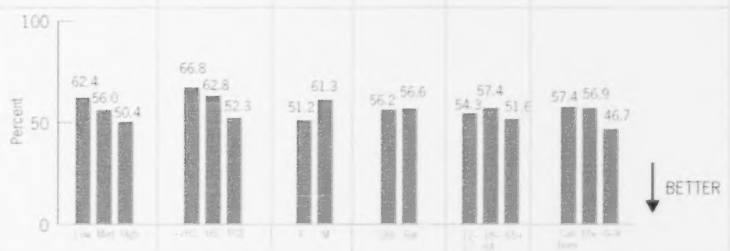
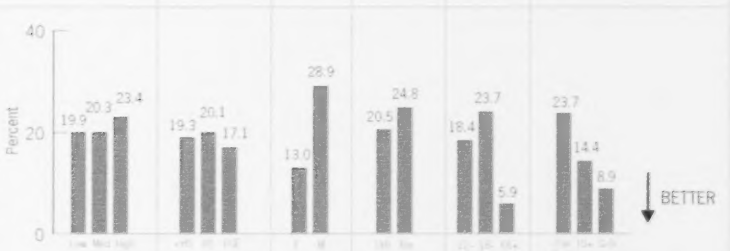
Indicator	Comparisons	Bottom line
	Income · Education · Sex · Location · Age · Immigrant Status	
Access to primary care: – Percentage of adults without a regular doctor*		**6.5% of adults in Ontario were without a regular doctor in FY 2009/10. Those most likely not to have a regular doctor are low-income individuals, men and immigrants who arrived in Canada in the last 10 years.** **The elderly are more likely to have a regular doctor than adults aged 18 to 64 years. Given that the elderly have greater healthcare needs, it is encouraging to see that they are more likely to have access to primary care.** **There were no significant differences in access to primary care by education or urban versus rural location.**
Monitoring of chronic disease: – Percentage of patients with diabetes who, in the past 12 months, had an eye exam**†		**In FY 2009/10, only about half (51%) of adults with diabetes in Ontario had an eye exam within the past year. Those most likely not to have had an eye exam were people aged 20 to 64. The rate of eye exams was slightly lower among low-income individuals, men, and those living in urban areas and in high immigrant population neighbourhoods.**

Legend: Low = 1st income quintile; Med = 3rd income quintile; High = 5th income quintile. HS = high school graduate; <HS = less than high school graduate; PSE = at least some post-secondary education. F = female; M = male. Urb = urban; Rur = rural. Can Born = Canadian-born. 0-9 = recent immigrant in Canada for nine years or less; 10+ = immigrant in Canada for 10 years or more. Low Imm = low immigrant population area; High Imm = high immigrant population area.† For this indicator, income is not measured directly, but inferred from the average income in one's immediate neighbourhood corresponding to the postal code. A high immigrant population area was defined as one where the neighbourhood, or census dissemination area (DA) surrounding one's postal code, showed the immigrant population at more than 50% of residents, as reported to Census Canada.

Data sources: *Primary Care Access Survey, FY 2009/10, provided by Institute for Clinical Evaluative Sciences (ICES).

**Ontario Diabetes Database, Ontario Health Insurance Plan, Registered Persons Database, FY 2009/10, calculated by ICES.

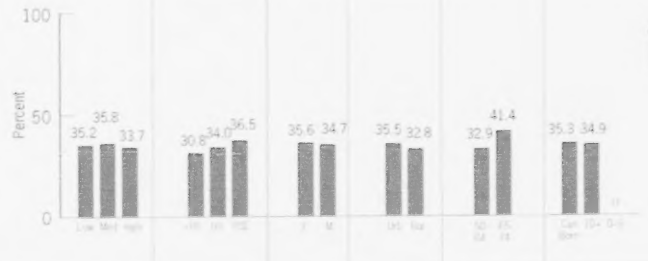
10.2 Unhealthy behaviour

Indicator	Comparisons						Bottom line
	Income	Education	Sex	Location	Age	Immigrant Status	
Percentage of the population who smoke*							In 2009, 19% of Ontarians smoked, 18% were obese, 49% were physically inactive, 56% had inadequate fruit and vegetable intake and 22% had binge drinking episodes.
Percentage of the population who are obese*							The lower the income, the higher the likelihood to smoke, be physically inactive and have inadequate fruit and vegetable intake. There was little difference by income group in obesity, except that the high income group had lower obesity rates than everyone else. Unlike other health behaviours, the likelihood of binge drinking increases with higher income.
Percentage of the population who are physically inactive*							Having a lower level of education is associated with worse results for all health behaviours except heavy drinking.
Percentage of the population with inadequate fruit and vegetable intake*							Living in a rural area is associated with higher rates of smoking, obesity and binge drinking, but lower rates of physical inactivity.
Percentage of the population who have had binge drinking episodes*							Adults aged 18 to 64 are more likely to smoke and drink heavily than older adults and adolescents. Elderly individuals are more likely to report being obese and physically inactive, but less likely to report having an inadequate fruit and vegetable intake and drinking heavily. There is no difference in fruit and vegetable intake by age group.
							Compared to women, men are more likely to smoke, have inadequate fruit and vegetable intake and be heavy drinkers, but less likely to be physically inactive.
							Immigrants are less likely to smoke, be obese and engage in binge drinking but more likely to be physically inactive. Fruit and vegetable intake is better among immigrants in Canada for less than 10 years.
							SUMMARY:
							If health professionals wish to direct their health promotion efforts towards those groups most likely to have any of these unhealthy behaviours, they should target the following:
							• Smoking — Less than high school education, low income, rural residents, aged 18 to 64 years, men, born in Canada
							• Obesity — Less than high school education, rural residents, aged 65+, born in Canada
							• Physical inactivity — Less than high school education, low income, immigrants, aged 65+, women; note that seniors are most likely to be inactive, but it is also important to target physical inactivity at earlier ages to maximize the benefits of exercise over a lifetime
							• Inadequate fruit and vegetable intake — Less than high school education, low income, men
							• Binge drinking — Men, rural residents, born in Canada, aged 18 to 64 years, high income

Legend: Low = 1st income quintile; Med = 3rd income quintile; High = 5th income quintile; HS = high school graduate; <HS = less than high school graduate; PSE = at least some post-secondary education; F = female; M = male; Urb = urban; Rur = rural; Can Born = Canadian-born; 0-9 = recent immigrant in Canada for nine years or less; 10+ = immigrant in Canada for 10 years or more.

Data source: *Canadian Community Health Survey, 2009, calculated by Institute for Clinical Evaluative Sciences

10.3 Preventive measures

Indicator	Comparisons						Bottom line
	Income	Education	Sex	Location	Age	Immigrant Status	
Percentage of women (aged 50 to 69) who had a mammogram within a two year period*†							**67% of eligible women had had a mammogram in the last two years, 73% of eligible women had had a Pap test in the last three years and 35% of eligible adults had had a fecal occult blood test (FOBT) in the last two years.** **The lower the income, the less likely a woman was to have had a mammogram or Pap test. No significant differences were seen in FOBT rates by income.**
Percentage of women aged 25 to 69 who had a Pap test within a three-year period**†							**Women aged 60 to 69 years were less likely to have a Pap test. Those aged 50 to 64 years were less likely than seniors aged 65 to 74 to have an FOBT. In both cases, this age gap could be due to a mistaken belief that the test is not as important at that age. No major differences were seen in mammography use by age.**
Percentage of people aged 50 to 74 who reported having a fecal occult blood test (FOBT) within a two-year period***§							

†Legend: Low = 1st income quintile; Med = 3rd income quintile; High = 5th income quintile; HS = high school graduate; <HS = less than high school graduate; PSE = at least some post-secondary education; F = female; M = male; Urb = urban; Rur = rural; Can Born = Canadian-born; 0-9 = recent immigrant in Canada for nine years or less; 10+ = immigrant in Canada for 10 years or more.

‡For these indicators, income is not measured directly, but inferred from the average income in one's immediate neighbourhood corresponding to the postal code. A high immigrant population area was defined as one where the neighbourhood, or census dissemination area (DA) surrounding one's postal code, showed the immigrant population at more than 50% of residents, as reported to Census Canada.

§Data suppressed for this category because of small sample size.

Data sources:

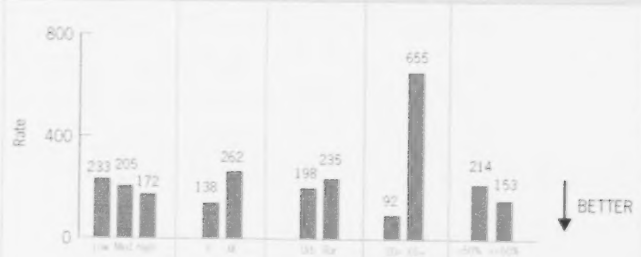
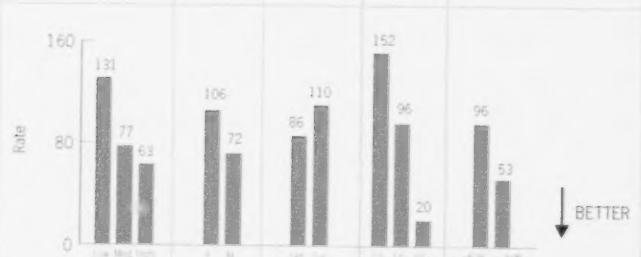
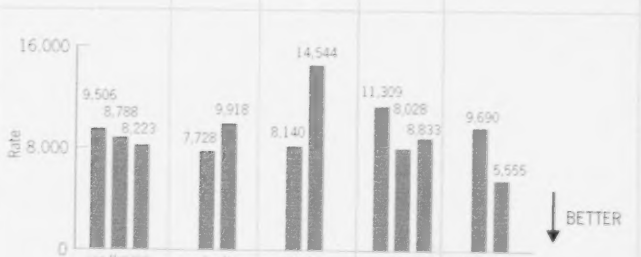
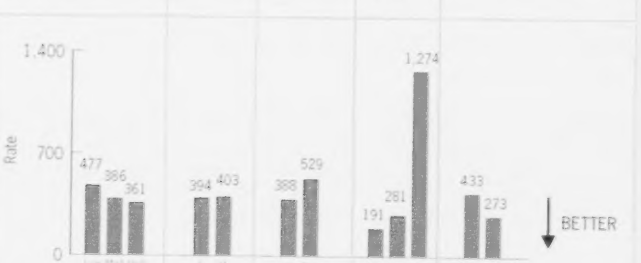
*Ontario Breast Screening Program, Ontario Cancer Registry (OCR), Ontario Health Insurance Plan (OHIP), Registered Persons Database (RPD), FY 2009/10, calculated by Institute for Clinical Evaluative Sciences (ICES).

**OCR, OHIP, RPD, National Ambulatory Care Reporting System Database, Discharge Abstract Database, FY 2009/10, calculated by ICES.

***Canadian Community Health Survey, 2009, calculated by ICES. Self-reported rates tend to overestimate actual rates; therefore, the true rates may be lower.

10.4 Diseases that could be avoided with a population health focus

HOSPITAL
LONG-TERM CARE
HOME CARE
PRIMARY CARE

Indicator	Comparisons					Bottom line
	Income	Sex	Location	Age	Immigrant Status	
Acute myocardial infarction (AMI) incidence per 100,000 people aged 20 and over*†						**In FY 2009/10, there were 197 new heart attacks, 88 emergency department visits for intentional self-harm, 8,845 emergency department visits for injuries and 404 hospitalizations for injuries, per 100,000 people. As income rises, the chance of experiencing any of these events decreases steadily. This is particularly noticeable for emergency department visits for intentional self-harm where the rate for those with the lowest income is more than twice the rate for those with the highest income.**
Rate of emergency department visits for intentional self-harm per 100,000 people aged 12 and over**†						**Men are at a greater risk of having a heart attack or an injury, but women are at greater risk of having an emergency department visit for intentional self-harm.**
Rate of injury-related emergency department visits per 100,000 people*†						**Rural residents are at greater risk of worse outcomes for all four measures. People living in areas with a large immigrant population are less likely to have worse outcomes.**
Rate of injury-related hospitalizations per capita*†						**Adolescents (aged 12 to 17) are more likely to have an emergency department visit for an injury, but the elderly are more likely to be hospitalized for an injury. Also, adolescents are much more likely than adults (aged 18 to 64) to have an emergency department visit for intentional self-harm.**

SUMMARY:

If health professionals wish to direct their health promotion efforts towards those groups most likely to have worse outcomes, they should target the following:

- **AMI (heart attack) incidence — Men, rural residents, low income, low immigrant population neighbourhoods**
- **Intentional self-harm — Adolescents, low income, rural residents, women, low immigrant population neighbourhoods**
- **Emergency department visits for injuries — Rural residents, adolescents, men, low immigrant population neighbourhoods, low income**
- **Hospitalization for injuries — Elderly, rural residents, low income, low immigrant population neighbourhoods**

Legend: Low = 1st income quintile; Med = 3rd income quintile; High = 5th income quintile. F = female; M = male. Urb = urban; Rur = rural. Low Imm = low immigrant population area; High Imm = high immigrant population area.

†For these indicators, income is not measured directly, but inferred from the average income in one's immediate neighbourhood corresponding to the postal code. A high immigrant population area was defined as one where the neighbourhood, or census dissemination area (DA) surrounding one's postal code, showed the immigrant population at more than 50% of residents, as reported to Census Canada.

Data sources:

*Discharge Abstract Database, National Ambulatory Care Reporting System Database (NACRS), Registered Persons Database (RPD), FY 2009/10, calculated by Institute for Clinical Evaluative Sciences (ICES).

**NACRS, RPD, FY 2009/10, calculated by ICES. Because of data limitations, it was not possible to measure education differences at the same time as income for this set of indicators.

10.4

Root Cause

Low-income persons face cost barriers. They cannot afford gym memberships or sports programs, have difficulty paying out-of-pocket costs (e.g. transportation), and may believe that healthy eating is too expensive.

Day-to-day survival is the main concern. Peoples' health concerns may be outweighed by priorities such as finding food, shelter, paying bills or escaping abusive situations.

Low-income persons may not access primary care and health promotion programs, because they are unaware of them, or are distracted by day-to-day survival.

Poverty generates chronic stress,[977] and people may cope through unhealthy but pleasurable activities like smoking.[978]

Low education or literacy level may lead to low level of knowledge about diet or healthy living.

People may lack skills, motivation or confidence to change health habits.

Disadvantaged persons may live in unhealthy neighbourhoods where people do not feel safe walking about to get exercise, or cannot get to supermarkets easily.

There is a local culture of unhealthy habits. Smoking or dangerous activities may be considered "normal"[989] within a community.

Ideas for Improvement

Promote low-cost healthy foods (see section 9.1 for list).

Consider offering **transportation and daycare for health promotion programs, or bring the program to the individual.**

Encourage access to low- or no-cost sports and recreation programs[970] and keep physical education in the school curriculum.[971]

Promote low-cost access to nutritious foods, such as the Good Food Box, a volunteer-run food distribution system operating in communities throughout the province.[972]

Consider offering **free nicotine replacement products** to low-income persons.

Ensure timely access to social workers and case management. Arrange supportive housing, employment counselling, skills development, or shelter for those suffering from abuse.

Design outreach programs to make participation easy. Bring primary care centres and health promotion activities deep into the communities being served — at community centres, malls, and wherever else people naturally congregate.[973] Develop models of care which **house primary care and social services in the same place,**[974] as many community health centres have done.[975, 976]

Consider offering **stress management therapies for low-income persons.** While evidence in the scientific literature is limited, methods that have been tried include meditation,[979] exercise relation and creative activities.[980]

Simplify and tailor learning materials. Ensure material uses graphics for those with low literacy, simple English or local slang, or the languages spoken by targeted communities. Keep instructions simple and step-by-step.[981]

Healthcare providers can provide or refer for **counselling on healthy diet or lifestyle. Group sessions** allow people with similar life challenges to support each other in their learning.

Consider distributing **healthy, low-cost shopping lists** and offering **supermarket tours,**[982] where individuals can learn where to find low cost, healthy foods, identify unhealthy foods, search for bargains, and read food labels. Consider **cooking classes**[983] **for underprivileged persons** on healthy cooking.

Promote **patient self-management,**[984, 985, 986, 987] where patients learn about their condition and are coached into setting their own reasonable goals for improvement that fit with their lifestyle (see section 9.1).

Make neighbourhoods safe. Increase foot patrols of police or security personnel, or organize group walking or physical activities. Work with municipal officials to ensure safe, well-lit paths for walking.

Design communities for healthy living, by zoning that encourages walking to shops and supermarkets. Such neighbourhoods tend to have better health outcomes.[988]

Organize community-wide healthy living events (e.g. community walks or sporting events). Identify **healthy role models** for disadvantaged children. **Identify "positive deviants"** — individuals or groups who have good health who live within unhealthy communities; find out their secret to success and spread it widely.[990]

HOSPITAL
LONG-TERM CARE
HOME CARE
PRIMARY CARE

Root Cause

Women in certain cultures may be reluctant to undergo mammography and Pap tests (see section 9.4).

Some rural activities are dangerous. Farming[991] and rural recreational activities like all-terrain vehicles (ATVs)[992] have high injury rates.

Ideas for Improvement

Develop culturally sensitive learning materials in the language of the target audience, which address myths about screening, emphasize the importance of the test, and use credible spokespersons from the culture (see section 9.4).

Identify common farming accidents (tractor rollovers, gas poisoning, and power takeoff entanglements) and promote specific measures to prevent them.[993] **Encourage use of safety gear** (e.g. helmets) and proper training when using recreational vehicles like ATVs.

What is Ontario doing?

- MOHLTC has developed a Health Equity Impact Assessment Tool (HEIA) to advance health equity integration in healthcare policy, planning and decision-making.[994] HEIA maps the unintended *potential* health impacts of a policy, program or project on specific population groups (e.g., Aboriginal, francophone, gender, income, race, and geography) and prompts the assessor to adjust the initiative to mitigate negative impacts and maximize positive impacts on impacted populations. MOHLTC began implementation in 2009 and HEIA pilots have been conducted within MOHLTC and in three of the 14 LHINs.

11 LHIN analyses

In this chapter, we present data on differences between each LHIN and the provincial average, for selected indicators where data were available. In the first set of tables, we present data for each LHIN, identifying where its performance is better or worse than average. We also include data over time for select indicators*. In the table at the end of this chapter, we present more detailed results for each indicator and each individual LHIN. Yellow shading shows that the LHIN was significantly better than the provincial average, while blue shading shows the LHIN is worse than average.

Differences were considered significant if they were both statistically significant** and clinically significant. We used the following guidelines to define significant differences:

Type of indicator	Guidelines for a clinically significant difference between a LHIN and the provincial average
Wait times	Relative difference of 25%
Rate of a serious adverse outcome	Relative difference of 25%
Percentage adoption of a best practice (process measure, often with a target of 100%)	Absolute difference of 5%***
Patient experience variable (e.g., percentage satisfied with x)	Absolute difference of 5%

Abbreviations used in this chapter are as follows:

ALC = alternate level of care (in this case, a hospital bed occupied by someone who could be better served in a different setting, such as a long-term care home)

AMI = acute myocardial infarction (heart attack)

CHF = congestive heart failure

COPD = chronic obstructive pulmonary disease (emphysema or chronic bronchitis)

ED = emergency department

FOBT = fecal occult blood test

LHIN = local health integration network

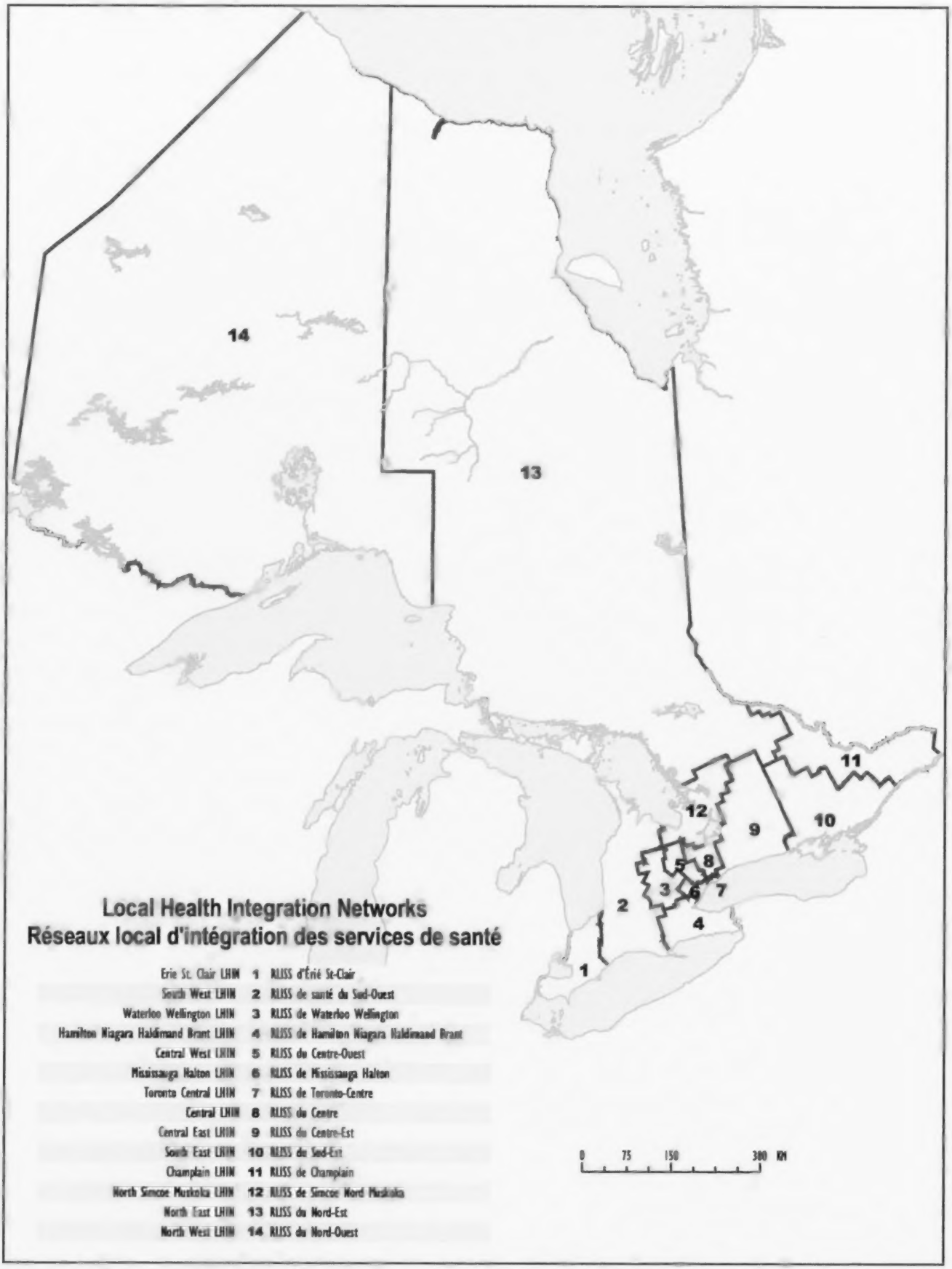
LTC = long-term care home

The following tables show some areas in which LHINs can improve. Please refer to the table at the very end of this chapter for more details on selected indicators where data was available.

* Only changes in LTC waits of greater than 1 week and changes of ALC >1% are commented on.

** For some indicators where data were obtained from other parties, confidence intervals were not available, but statistical significance was inferred based on estimates of the sample size and assumptions about the probability distribution of the variable. See the technical appendix to this document at www.hqontario.ca for more details.

*** In some instances where the rate is high (e.g. 96%) but the target is clearly 100%, the difference is treated as defect (e.g. 4%) and a relative difference of 25% is considered significant (in this example, a difference greater than plus or minus 1% would be considered significant).



Local Health Integration Networks
Réseaux local d'intégration des services de santé

Erie St. Clair LHIN	1	RLISS d'Érié St-Clair
South West LHIN	2	RLISS de santé du Sud-Ouest
Waterloo Wellington LHIN	3	RLISS de Waterloo Wellington
Hamilton Niagara Haldimand Brant LHIN	4	RLISS de Hamilton Niagara Haldimand Brant
Central West LHIN	5	RLISS du Centre-Ouest
Mississauga Halton LHIN	6	RLISS de Mississauga Halton
Toronto Central LHIN	7	RLISS de Toronto-Centre
Central LHIN	8	RLISS du Centre
Central East LHIN	9	RLISS du Centre-Est
South East LHIN	10	RLISS du Sud-Est
Champlain LHIN	11	RLISS de Champlain
North Simcoe Muskoka LHIN	12	RLISS de Simcoe Nord Muskoka
North East LHIN	13	RLISS du Nord-Est
North West LHIN	14	RLISS du Nord-Ouest

ERIE ST. CLAIR LHIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• Shorter waits for a LTC bed, especially for people placed from the community • Fewer ALC hospital bed days • Shorter wait times for CT/MRI scans, cancer surgery, cataract surgery and hip and knee replacements (general surgery waits similar to rest of province) • More timely home care visits after hospital discharge
Average results, still room to improve	• ED wait times (but relatively fast transfer to a bed after admission) • Access to primary care • Chronic disease management (diabetes complications, AMI survival) • Use of right drugs for hospital patients with AMI, CHF • C-section rates • Avoidable hospitalizations (readmissions higher for some conditions, lower for others) • LTC safety and effectiveness (most indicators at provincial average) • Home care safety and effectiveness • Avoidable ED visits by LTC residents • Preventive health screening
Worse than average results, major room to improve	• Population health - smoking, obesity, physical activity, binge drinking are at provincial average but rates of fruit and vegetable intake and smoking in pregnancy are worse, and lowest rate in Ontario for breastfeeding

Note: Erie-St. Clair has a relatively low supply of family doctors and specialists.

CHANGES OVER TIME:

LTC waits (from Apr-Jun 09 to 2009/10)	Overall	No major change
	Placement from hospital	Worse by 18 days
	Placement from home	Better by 12 days
ALC (from 2008/09 to 2009/10)		No major change

SOUTHWEST LHIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• Shorter ED wait times • Shorter waits for a LTC bed, especially for people placed from the community • Fewer ALC hospital bed days • Shorter wait times for CT scans, MRI • Lower C-section rates
Average results, still room to improve	• Access to primary care • Wait times for most surgeries (except cancer) • Avoidable hospitalizations • Avoidable ED visits by LTC residents • Chronic disease management (diabetes complications, AMI survival) • Use of right drugs for hospital patients with AMI, CHF • LTC safety and effectiveness (most indicators at provincial average) • Home care safety and effectiveness • Preventive health screening
Worse than average results, major room to improve	• Wait times for cancer surgery • Population health – smoking and physical inactivity rates are average but worse results for obesity, fruit and vegetable intake, smoking in pregnancy; higher rates of injury

Note: Southwest LHIN has a relatively high supply of nurses, nurse practitioners and registered practical nurses.

CHANGES OVER TIME:

LTC waits (from Apr-Jun 09 to 2009/10)	Overall	No major change
	Placement from hospital	No major change
	Placement from home	No major change
ALC (from 2008/09 to 2009/10)		No major change

WATERLOO-WELLINGTON LHIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• Use of right drugs for hospital patients with AMI, CHF • Shorter waits for cancer and general surgery, cataract surgeries and hip replacements • Avoidable ED visits by LTC residents
Average results, still room to improve	• ED waits – a mixed picture, with longer waits to see a physician but shorter waits for those who are admitted • ALC hospital bed days • Access to primary care • Waits for CT/MRI, cancer surgery, knee replacements • Home care waits • Avoidable hospitalizations (readmissions higher for some conditions, lower for others) • Chronic disease management (diabetes complications, AMI survival) • C-section rates • LTC safety and effectiveness (most indicators at provincial average) • Home care safety and effectiveness • Population health (smoking, obesity, physical inactivity, diet, binge drinking similar to provincial rates) • Preventive health screening
Worse than average results, major room to improve	• Longer waits for a LTC bed, especially for people placed from the community

Note: Waterloo-Wellington has a relatively low supply of specialists.

CHANGES OVER TIME:

LTC waits (from Apr-Jun 09 to 2009/10)	Overall	Worse by 26 days
	Placement from hospital	Worse by 22 days
	Placement from home	Worse by 20 days
ALC (from 2008/09 to 2009/10)		Improved by 2%. (Note that the paradoxical improvement in ALC with worsening LTC waits may be due to different time periods used for comparisons over time).

HAMILTON-NIAGARA-HALDIMAND-BRANT LHIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• Access to primary care
Average results, still room to improve	• Home care waits • Avoidable hospitalizations (most indicators at provincial average) • Chronic disease management (diabetes complications, AMI survival) • Use of right drugs for hospital patients with AMI, CHF • C-section rates • LTC safety and effectiveness • Home care safety and effectiveness • Avoidable ED visits by LTC residents • Population health (most indicators at provincial average) • Preventive health screening (but rates of fecal occult blood testing are lower)
Worse than average results, major room to improve	• Longer ED wait times, especially for admitted patients • More ALC hospital bed days • Longer waits for a LTC bed, especially for people placed from hospital • Longer waits for hip and knee replacement and CT/MRI (waits are average for other surgeries, like cancer, general surgery, cataracts)

CHANGES OVER TIME:

LTC waits (from Apr-Jun 09 to 2009/10)	Overall	Worse by 34 days
	Placement from hospital	Worse by 28 days
	Placement from home	Worse by 46 days
ALC (from 2008/09 to 2009/10)		Improved by 3%. (Note that the paradoxical improvement in ALC with worsening LTC waits may be due to different time periods used for comparisons over time).

CENTRAL WEST LHIN

Superior results, no room to improve	• Rate of statin use after an AMI surpasses 90% target
Better than average results, still room to improve	• Shortest wait for a LTC bed in Ontario (however, lowest rate of people given their first choice of LTC home) • Fewer ALC hospital bed days • Shorter wait times for, general surgery, hip replacement, CT scans • Population health (lower rates of smoking, smoking in pregnancy, binge drinking, inadequate fruit & vegetable intake; lower rates of injury and self-harm; physical inactivity, however, is worse than average)
Average results, still room to improve	• Access to primary care • Waits for MRI, cancer surgery, cataract surgery, knee replacement • Home care waits • Avoidable hospitalizations (readmissions higher for some conditions, lower for others) • Chronic disease management (diabetes complications, AMI survival) • LTC safety and effectiveness • Avoidable ED visits by LTC residents
Worse than average results, major room to improve	• Longer ED wait times • Higher C-section rate for uncomplicated deliveries • Drug safety in LTC (high rates of new starts of antipsychotics, anti-anxiety drugs) • Home care safety and effectiveness • Preventive health screening – worse results for flu shots, mammography and fecal occult blood testing

Note: Central West has a relatively low supply of family doctors, specialists and nurses.

CHANGES OVER TIME:

LTC waits (from Apr-Jun 09 to 2009/10)	Overall	No major change
	Placement from hospital	No major change
	Placement from home	Better by 27 days
ALC (from 2008/09 to 2009/10)		No major change

MISSISSAUGA-HALTON LHIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• Fewer ALC hospital bed days • Shorter waits for a LTC bed, for people placed from hospital • Avoidable hospitalizations – low rates of admission for ambulatory care sensitive conditions and lower readmission rates for AMI, diabetes, GI bleed • Shorter wait times for hip and knee replacements
Average results, still room to improve	• ED wait times • Access to primary care • Waits for surgery and CT/MRI – mostly similar to provincial average, but waits are lower for hip and knee replacement • Home care waits • Chronic disease management (diabetes complications, AMI survival) • Use of right drugs for hospital patients with AMI, CHF • C-section rates • LTC safety and effectiveness (most indicators at average) • Home care safety and effectiveness (most indicators at average) • Avoidable ED visits by LTC residents • Preventive health screening (but worse results on flu vaccination)
Worse than average results, major room to improve	• Population health (most rates at average but lower rate of smoking during pregnancy, breastfeeding right after birth, inadequate fruit and vegetable intake, and intentional self-harm)

Mississauga-Halton has a relatively low supply of specialists and nurses.

CHANGES OVER TIME:

LTC waits (from Apr-Jun 09 to 2009/10)	Overall	No major change
	Placement from hospital	No major change
	Placement from home	Better by 25 days
ALC (from 2008/09 to 2009/10)		Improved by 4%

TORONTO CENTRAL

Superior results, no room to improve	• None
Better than average results, still room to improve	• Lower rate of ALC hospital bed days • LTC safety and effectiveness – average for most indicators but better results on restraint use, worsening depression/ anxiety, and lower rate of new prescriptions for antipsychotics • Population health (lowest rate of smoking; lower obesity; higher rates of breastfeeding) • Shorter wait times for hip and knee replacements
Average results, still room to improve	• Wait time for a LTC bed • Access to primary care • Waits for CT, MRI • Waits for general surgery, cataract surgery • Home care waits • Avoidable hospitalizations – rate of hospitalizations for ambulatory care sensitive conditions similar to provincial average; rates worse than average for COPD, stroke, diabetes readmissions • Chronic disease management (diabetes complications, AMI survival) • Use of right drugs for hospital patients with AMI, CHF • C-section rates • Avoidable ED visits by LTC residents • Preventive health screening – most rates at average but mammography screening, fecal occult blood test lower than average
Worse than average results, major room to improve	• Longer ED wait times • Longer waits for cancer surgery • Home care safety and effectiveness – average for most indicators but worse results for worsening activities of daily living, depression and worsening cognitive function • Highest incidence of HIV infection

Note: Toronto Central has a relatively high supply of family doctors and nurses, and the highest concentration of specialists in Ontario.

CHANGES OVER TIME:

LTC waits (from Apr-Jun 09 to 2009/10)	Overall	Worse by 20 days
	Placement from hospital	Worse by 10 days
	Placement from home	Worse by 48 days
ALC (from 2008/09 to 2009/10)		No major change

CENTRAL LHIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• Avoidable hospitalizations – lowest rate of admissions for ambulatory care sensitive conditions in Ontario • LTC safety and effectiveness (lower restraint use; lower rate of worsening of activities of daily living, pain, or depression / anxiety) • Shorter wait times for surgery, including cataract, cancer, hip and knee replacements and general surgeries • Population health – lower rates for smoking in pregnancy, obesity, binge drinking; lower rates for self-harm and injuries
Average results, still room to improve	• ALC hospital bed days • Waits for a LTC bed • Wait times for CT/MRI • Access to primary care • Home care waits • Chronic disease management (diabetes complications, AMI survival) • Use of right drugs for hospital patients with AMI, CHF • C-section rates • Home care safety and effectiveness (better than average results for weight loss; worse results for depression) • Avoidable ED visits by LTC residents • Preventive health screening (average for most indicators but higher rates of Pap screening)
Worse than average results, major room to improve	• Longer ED waits, especially for admitted patients

Note: The Central LHIN has a relatively low supply of specialists and nurses

CHANGES OVER TIME:

LTC waits (from Apr-Jun 09 to 2009/10)	Overall	Better by 8 days
	Placement from hospital	Better by 8 days
	Placement from home	Better by 20 days
ALC (from 2008/09 to 2009/10)		Worsened by 2%. (Note that the paradoxical increase in ALC with improvement in LTC waits may be due to different time periods used for comparisons over time).

CENTRAL EAST LHIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• Shorter wait times for general surgeries
Average results, still room to improve	• ALC hospital bed days • Wait time for a LTC bed is similar to provincial average, but waits are longer than average for people being placed from hospital • Access to primary care • Waits for CT/MRI and surgery (with shorter waits for general surgery, longer waits for cataract surgery) • Home care waits • Avoidable hospitalizations (most indicators at provincial average; lower readmission rate for stroke and diabetes) • Chronic disease management (diabetes complications, AMI survival) • Use of right drugs for hospital patients with AMI, CHF • C-section rates • LTC safety and effectiveness • Home care safety and effectiveness • Avoidable ED visits by LTC residents • Population health (smoking, obesity at provincial average but higher than average rate of physical inactivity) • Preventive health screening (but lower rate of fecal occult blood testing)
Worse than average results, major room to improve	• Longer ED wait times, especially for admitted patients • Relatively low supply of specialists and nurses

CHANGES OVER TIME:

LTC waits (from Apr-Jun 09 to 2009/10)	Overall	Worse by 26 days
	Placement from hospital	Worse by 26 days
	Placement from home	Worse by 8 days
ALC (from 2008/09 to 2009/10)		Worsened by 3%

SOUTHEAST LHIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• ED wait times • Access to primary care • Shorter wait times for cataract surgery
Average results, still room to improve	• ALC hospital bed days • Waits for a LTC bed • Waits for surgery is at average, but long waits for MRI scans • Avoidable hospitalizations (readmissions higher for some conditions, lower for others) • Chronic disease management (diabetes complications, AMI survival) • Use of right drugs for hospital patients with AMI, CHF • C-section rates • LTC safety and effectiveness (most indicators similar to provincial average; worse rates for bladder infections, restraint use, use of new antipsychotics) • Home care safety and effectiveness (most indicators similar to provincial average) • Avoidable ED visits by LTC residents • Supply of family doctors, specialists and nurses • Preventive health screening (most indicators similar to provincial average, but with higher rates of Pap tests)
Worse than average results, major room to improve	• Longer waits for MRI • Home care waits • Population health (higher rate of smoking but less physical inactivity; higher rates of self-harm, injury-related ED visits)

Note: The Southeast has a relatively higher supply of nurses and nurse practitioners and an average supply of doctors.

CHANGES OVER TIME:

LTC waits (from Apr-Jun 09 to 2009/10)	Overall	No major changes
	Placement from hospital	Better by 23 days
	Placement from home	No major changes
ALC (from 2008/09 to 2009/10)		No major changes

CHAMPLAIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• Shorter wait times for MRI scans • Avoidable hospitalizations (rate of admission for ambulatory care sensitive conditions slightly lower than average; readmissions lower for AMI, asthma, stroke and GI bleed)
Average results, still room to improve	• ALC hospital bed days • ED wait times • Access to primary care • Wait times for CT scans, cancer surgery • Avoidable ED visits by LTC residents • Chronic disease management (diabetes complications, AMI survival) • Use of right drugs for hospital patients with AMI, CHF • C-section rates • LTC safety and effectiveness (average for most indicators; worse results for restraint use but better (lower) results for new starts of anti-anxiety drugs) • Home care safety and effectiveness (average for most indicators) • Population health (average results for smoking, obesity; higher rate of binge drinking but lower rate of physical inactivity; higher rate of breastfeeding) • Preventive health screening (average for most indicators but better results for Pap screening)
Worse than average results, major room to improve	• Longer waits for hip and knee replacement, cataract surgery, general surgery • Longest wait time for a LTC bed in Ontario, for people placed from the community. (Wait times for people placed from hospital are close to the provincial average) • Longer time to home care visit after hospital discharge • Second-highest rate of HIV incidence in Ontario (after Toronto Central)

Note: Champlain has a relatively high family physician and specialist supply.

CHANGES OVER TIME:

LTC waits (from Apr-Jun 09 to 2009/10)	Overall	Better by 28 days
	Placement from hospital	Worse by 11 days
	Placement from home	Worse by 13 days
ALC (from 2008/09 to 2009/10)		Worsened by 2%

NORTH SIMCOE MUSKOKA LHIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• Shorter ED waits
Average results, still room to improve	• ALC hospital bed days • Access to primary care (% of population without a family doctor similar to average, but very low % of population who can get timely appointment with family doctor) • Waits for CT scans, general surgery & cancer surgery • Home care waits • Avoidable hospitalizations (most indicators at provincial average; readmissions higher for asthma, GI bleed) • Chronic disease management (diabetes complications, AMI survival) • Use of right drugs for hospital patients with AMI, CHF • C-section rates • LTC safety and effectiveness (average for most indicators; higher (worse) rate of new starts of benzodiazepines among residents) • Home care safety and effectiveness (average results for most indicators; worse results for decline in cognitive function and unintended weight loss) • Average supply of family doctors and nurses; relatively low supply of specialists; relatively high supply of registered practical nurses • Preventive health screening (lower physical inactivity but higher smoking in pregnancy)
Worse than average results, major room to improve	• Longer waits for a LTC bed • Longer waits for hip and knee replacement • Higher rate of avoidable ED visits by LTC residents, especially for low acuity visits

CHANGES OVER TIME:

LTC waits (from Apr-Jun 09 to 2009/10)	Overall	Worse by 23 days
	Placement from hospital	Worse by 14 days
	Placement from home	Worse by 49 days
ALC (from 2008/09 to 2009/10)		No major changes

NORTHEAST LHIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• Shorter ED waits, especially for admitted patients • Shorter wait for MRI, general surgery
Average results, still room to improve	• Wait times for CT • C-section rates • LTC safety and effectiveness • Home care safety and effectiveness • Avoidable ED visits by LTC residents, rate of avoidable low acuity visits is worse than average • Preventive health screening
Worse than average results, major room to improve	• Longer waits for hip and knee replacement, urgent cancer surgery, cataract surgery • More ALC hospital bed days • Longer waits for a LTC bed, especially for people placed from hospital (but higher percentage of residents placed in first choice of home)Higher percentage of residents placed into LTC who might not need to be there (low MAPLe score) • Access to primary care – lower proportion of population with a family doctor • Home care waits • Lower rate of use of right drugs for hospital patients with AMI • More avoidable hospitalizations (high rates of admission for ambulatory care sensitive conditions, stroke and AMI readmissions) • Worse chronic disease management (higher rates of diabetes complications) • Population health (higher rates of smoking, obesity, AMI incidence, injuries, intentional self-harm; however, lower rates of physical inactivity)

The Northeast has an average supply of family doctors, a relatively low supply of specialists and high supply of nurses and nurse practitioners.

CHANGES OVER TIME:

LTC waits (from Apr-Jun 09 to 2009/10)	Overall	No major changes
	Placement from hospital	Worse by 21 days
	Placement from home	No major changes
ALC (from 2008/09 to 2009/10)		No major changes

NORTHWEST LHIN

Superior results, no room to improve	• None
Better than average results, still room to improve	• Shorter ED waits • Shorter waits for CT, MRI and knee replacements • Shorter time to home care visit after hospital discharge
Average results, still room to improve	• ALC hospital bed days • Waits for hip replacement, general surgery • C-section rates • Home care safety and effectiveness (most indicators at provincial average) • Avoidable ED visits by LTC residents • Preventive health screening (but rates of flu vaccination lower)
Worse than average results, major room to improve	• Lower access to primary care (higher % of population without a family doctor; more difficult to get appointment next day with family doctor) • Longer waits for a LTC bed for people placed from the community • Higher waits for urgent cancer surgery • Lower use of right drugs for hospital patients with AMI, CHF • Worse chronic disease management (higher rates of diabetes complications) • More avoidable hospitalizations (high rates of hospitalization for ambulatory care sensitive conditions; highest rate of readmissions for CHF; high stroke readmissions) • LTC safety and effectiveness (higher rates of unintended weight loss; new starts of benzodiazepines; new pressure ulcers; use of restraints) • Population health (higher rates of smoking, smoking in pregnancy, obesity, binge drinking, AMI incidence, injuries, intentional self-harm; however, lower rates of physical inactivity)

Note: The Northwest has an average supply of family doctors, relatively low supply of specialists and high supply of nurses and nurse practitioners.

CHANGES OVER TIME:

LTC waits (from Apr-Jun 09 to 2009/10)	Overall	Worse by 21 days
	Placement from hospital	Worse by 26 days
	Placement from home	Better by 181 days
ALC (from 2008/09 to 2009/10)		No major changes

Attribute/Theme	Indicator		Directionality	Ontario	Erie St. Clair	South West	Waterloo Wellington	Hamilton Niagara Haldimand Brant	Central West	Mississauga Halton	Toronto Central	Central	Central East	South East	Champlain	North Simcoe Muskoka	North East	North West
Accessible 2.1 Wait Times in emergency departments	Emergency Department - Percentage of patients left without being seen, 2009/10		↓ BETTER	4.7%	5.2%	3.4%	6.1%	5.7%	5.8%	4.5%	5.3%	5.3%	5.3%	3.6%	4.6%	4.1%	3.9%	3.4%
	Emergency Department - time to MD assessment by all levels, 2009/10		↓ BETTER	1.2	1.2	0.9	1.5	1.1	1.6	1.3	1.5	1.5	1.4	0.9	1.3	1.0	0.9	0.8
	Emergency Department - time from admission to transfer to bed all levels, 2009/10		↓ BETTER	3.0	1.8	1.8	2.1	4.0	3.3	3.8	3.5	6.0	4.5	2.3	2.9	3.5	1.9	1.8
	90th percentile wait time for high complexity ED patients, Sep 2010		↓ BETTER	11.7	9.0	9.3	10.1	14.9	11.7	10.1	14.2	13.2	11.8	9.4	13.2	8.8	10.6	11.2
	90th percentile wait time for low complexity ED patients, Sep 2010		↓ BETTER	4.3	4.5	3.8	5.3	4.7	4.1	3.7	4.9	3.8	4.3	4.1	5.2	3.7	4.1	4.2
Accessible 2.2 Access to Primary Care	Percentage of adults without a family doctor, 2009/10		↓ BETTER	6.4%	6.2%	6.1%	4.3%	3.0%	7.3%	5.0%	8.0%	6.0%	5.8%	2.4%	10%	5.9%	14%	12%
	Percentage of adults able to see their doctor on the same day or next day the last time they were sick or needed medical attention, 2009/10		↑ BETTER	43%	31%	46%	48%	45%	49%	49%	48%	44%	40%	46%	42%	23%	34%	27%
Accessible 2.3 Surgical Wait Times and Access to Specialists	CT Scans	Percentage of priority 2 cases done within target, Dec 2010	↑ BETTER	90%	96%	90%	81%	90%	97%	88%	95%	96%	81%	78%	93%	96%	88%	96%
		Percentage of priority 3 cases done within target, Dec 2010	↑ BETTER	64%	74%	78%	56%	56%	75%	60%	70%	59%	57%	76%	61%	70%	53%	81%
		Percentage of priority 4 cases done within target, Dec 2010	↑ BETTER	81%	88%	87%	95%	70%	100%	89%	74%	78%	85%	93%	68%	81%	81%	87%
		90th percentile wait time, Dec 2010	↓ BETTER	29	28	25	26	41	14	23	35	41	27	16	34	32	30	23
	MRI Scans	Percentage of priority 2 cases done within target, Dec 2010	↑ BETTER	75%	86%	72%	78%	57%	70%	90%	76%	66%	65%	61%	84%	94%	73%	93%
		Percentage of priority 3 cases done within target, Dec 2010	↑ BETTER	51%	78%	51%	27%	40%	57%	74%	51%	53%	38%	20%	60%	43%	56%	71%
		Percentage of priority 4 cases done within target, Dec 2010	↑ BETTER	30%	44%	38%	62%	15%	19%	13%	39%	30%	32%	22%	35%	17%	41%	23%
		90th percentile wait time, Dec 2010	↓ BETTER	113	50	70	61	120	128	141	125	124	104	100	104	94	113	76

= better than average = not significantly different from average = worse than average

Attribute/Theme	Indicator		Directionality	Ontario	Erie St. Clair	South West	Waterloo Wellington	Hamilton Niagara Haldimand Brant	Central West	Mississauga Halton	Toronto Central	Central	Central East	South East	Champlain	North Simcoe Muskoka	North East	North West
Accessible 2.3 Surgical Wait Times and Access to Specialists	Cancer Surgeries	Percentage of priority 2 cases done within target, Dec 2010	↑ BETTER	67%	87%	54%	64%	73%	NV	71%	60%	81%	56%	NV	71%	67%	50%	56%
		Percentage of priority 3 cases done within target, Dec 2010	↑ BETTER	78%	86%	67%	91%	72%	82%	85%	72%	92%	85%	83%	79%	80%	67%	91%
		Percentage of priority 4 cases done within target, Dec 2010	↑ BETTER	93%	96%	84%	96%	89%	93%	96%	88%	99%	99%	88%	98%	100%	89%	100%
		90th percentile wait time, Dec 2010	↓ BETTER	51	43	71	40	56	62	54	55	34	43	40	49	44	47	32
	Cataract Surgeries	Percentage of priority 2 cases done within target, Dec 2010	↑ BETTER	90%	97%	29%	NV	75%	NV	NV	NV	100%	NV	NV	NV	60%	NV	NV
		Percentage of priority 3 cases done within target, Dec 2010	↑ BETTER	83%	81%	99%	100%	72%	NV	89%	96%	100%	81%	98%	55%	97%	59%	NV
		Percentage of priority 4 cases done within target, Dec 2010	↑ BETTER	98%	100%	99%	100%	98%	99%	96%	100%	100%	96%	99%	94%	97%	93%	98%
		90th percentile wait time, Dec 2010	↓ BETTER	122	68	72	94	143	116	160	112	82	156	93	169	151	124	78
	Hip Replacements	Percentage of priority 2 cases done within target, Dec 2010	↑ BETTER	74%	NV	83%	NV	73%	NV	NV	91%	NV	NV	50%	63%	NV	NV	NV
		Percentage of priority 3 cases done within target, Dec 2010	↑ BETTER	66%	100%	54%	80%	62%	NV	63%	95%	88%	74%	75%	26%	47%	53%	NV
		Percentage of priority 4 cases done within target, Dec 2010	↑ BETTER	84%	100%	95%	100%	74%	100%	91%	91%	100%	81%	94%	51%	67%	82%	86%
		90th percentile wait time, Dec 2010	↓ BETTER	206	93	163	97	235	131	128	125	140	185	141	351	243	323	203
	Knee Replacements	Percentage of priority 2 cases done within target, Dec 2010	↑ BETTER	63%	NV	NV	NV	57%	NV	NV	100%	NV	63%	NV	NV	NV	NV	NV
		Percentage of priority 3 cases done within target, Dec 2010	↑ BETTER	63%	89%	44%	69%	49%	86%	75%	85%	82%	78%	74%	34%	45%	61%	77%
		Percentage of priority 4 cases done within target, Dec 2010	↑ BETTER	88%	94%	86%	90%	86%	90%	94%	96%	94%	90%	79%	81%	80%	63%	92%
		90th percentile wait time, Dec 2010	↓ BETTER	200	126	211	176	209	180	138	135	166	172	160	226	228	427	173

* NV= no value for this LHIN

= better than average = not significantly different from average = worse than average

Attribute/Theme	Indicator		Directionality	Ontario	Erie St. Clair	South West	Waterloo Wellington	Hamilton Niagara Haldimand Brant	Central West	Mississauga Halton	Toronto Central	Central	Central East	South East	Champlain	North Simcoe Muskoka	North East	North West
Accessible 2.3 Surgical wait times and access to specialists	General Surgeries	Percentage of priority 2 cases done within target, Dec 2010	↑ BETTER	83%	89%	82%	NV	72%	100%	91%	78%	100%	83%	63%	88%	95%	79%	81%
		Percentage of priority 3 cases done within target, Dec 2010	↑ BETTER	91%	87%	92%	98%	87%	100%	88%	83%	98%	94%	89%	89%	83%	94%	91%
		Percentage of priority 4 cases done within target, Dec 2010	↑ BETTER	97%	94%	97%	96%	96%	99%	99%	96%	99%	99%	96%	93%	100%	98%	93%
		90th percentile wait time, Dec 2010	↓ BETTER	97	101	104	79	104	60	86	110	80	85	99	154	101	90	107
Accessible 2.4 Access to long-term care and home care	Median number of days to long-term care home placement, 2009/10:	overall	↓ BETTER	113	92	84	182	178	47	120	98	116	114	111	209	143	133	139
		from acute care hospital	↓ BETTER	58	44	47	64	107	28	40	63	48	83	61	58	85	125	71
		from community	↓ BETTER	173	119	125	266	215	77	176	195	194	144	148	314	223	151	229
	Percentage of residents who are placed in their first choice of LTC home, 2009/10		↑ BETTER	39%	39%	40%	34%	43%	30%	36%	43%	36%	36%	40%	39%	36%	49%	35%
Effective 3.1 Use of right treatments in hospital	Percentage of seniors hospitalized for AMI who, within 90 days post-discharge, filled a prescription for: (2009/10)	beta-blocker	↑ BETTER	79%	77%	79%	87%	76%	80%	76%	80%	81%	79%	83%	83%	80%	72%	72%
		ACEI/ARB	↑ BETTER	78%	76%	78%	83%	79%	83%	82%	77%	79%	79%	81%	78%	77%	72%	75%
		statin	↑ BETTER	87%	86%	82%	87%	86%	93%	88%	88%	90%	89%	89%	90%	86%	82%	87%
		all three drugs	↑ BETTER	59%	57%	57%	68%	57%	66%	61%	62%	61%	60%	63%	63%	58%	46%	51%
	Percentage of seniors hospitalized for CHF who, within 90 days post-discharge, filled a prescription for: (2009/10)	beta-blocker	↑ BETTER	66%	61%	63%	73%	65%	71%	64%	68%	67%	67%	72%	70%	65%	62%	59%
		ACEI/ARB	↑ BETTER	71%	68%	70%	78%	75%	71%	73%	69%	72%	70%	66%	69%	71%	70%	73%
		both beta-blocker and ACEI/ARB	↑ BETTER	50%	45%	48%	59%	50%	51%	50%	51%	51%	49%	52%	52%	49%	48%	46%

* NV= no value for this LHIN

= better than average = not significantly different from average = worse than average

Attribute/Theme	Indicator		Directionality	Ontario	Erie St. Clair	South West	Waterloo Wellington	Hamilton Niagara Haldimand Brant	Central West	Mississauga Halton	Toronto Central	Central	Central East	South East	Champlain	North Simcoe Muskoka	North East	North West
Effective 3.1 Use of right treatments in hospital	Rate of delivering via Caesarean section per 100 deliveries, 2009/10		↓ BETTER	28%	25%	22%	26%	29%	30%	28%	30%	30%	30%	28%	29%	31%	29%	25%
	Rate of low-risk first-time mothers who deliver a full-term baby via Caesarean section per 100 deliveries, 2009/10		↓ BETTER	15%	13%	10%	13%	15%	19%	13%	17%	15%	16%	16%	13%	17%	14%	14%
Effective 3.2 Chronic disease management	Percentage diabetes patients who had an eye exam in the past 12 months, 2009/10		↑ BETTER	51%	54%	54%	55%	53%	46%	49%	46%	47%	51%	55%	52%	51%	55%	55%
	Percentage of elderly diabetes patients regularly taking:	a statin	↑ BETTER	60%	58%	58%	58%	61%	59%	60%	60%	60%	63%	60%	60%	60%	59%	57%
		an ACEI/ARB	↑ BETTER	67%	69%	67%	68%	71%	66%	66%	64%	65%	70%	67%	65%	69%	70%	69%
		both statin and ACEI/ARB	↑ BETTER	48%	46%	45%	46%	50%	47%	48%	47%	47%	51%	47%	46%	48%	46%	46%
	Rate of people with diabetes who had any serious diabetes complication, 2009/10		↓ BETTER	4.3	4.7	4.5	4.4	4.7	3.8	3.4	4.2	3.4	4.1	4.8	4.3	4.9	5.4	5.7
	Adjusted mortality rate in the year after diagnosis of congestive heart failure (CHF), 2008/09		↓ BETTER	35	37	40	35	35	30	33	36	36	35	38	36	41	37	35
	Adjusted rate of death per 100 heart attack patients between 30 days and one year after their first heart attack, 2008/09		↓ BETTER	9.1	9.7	10	9.8	9.6	8.8	8.9	10	9.3	9.1	9.7	8.8	9.9	10	9.5
Effective 3.3 Potentially avoidable hospitalizations	Rates of hospitalizations for ambulatory care sensitive conditions in Ontario, 2009/10		↓ BETTER	278	338	300	236	325	280	203	241	181	254	317	257	317	491	529
	Rate of readmission to acute care hospital within 30 days of being discharged for: (2009/10)	AMI	↓ BETTER	4.25	5.1	3.9	3.6	4.2	6.3	3.0	3.2	3.7	3.3	3.5	3.1	3.3	8.2	5.1
		CHF	↓ BETTER	11.09	13	8.5	7.9	11	11	10	12	11	10	11	12	12	12	16
		asthma	↓ BETTER	3.86	5.1	4.1	1.3	3.5	5.9	4.7	3.4	4.0	3.9	0.0	2.3	6.1	2.9	0.0
		COPD	↓ BETTER	7.65	7.2	6.4	8.0	8.1	7.4	5.8	12	5.0	7.7	10	8.1	6.7	7.0	6.7
		stroke (medical)	↓ BETTER	2.64	2.9	3.1	1.9	2.5	2.4	2.1	3.5	2.9	1.9	1.2	1.9	2.1	4.1	2.5
		GI bleed	↓ BETTER	1.75	2.8	2.1	2.5	1.8	1.2	1.1	1.4	1.1	2.6	1.6	0.8	2.5	1.4	3.1
		gastrointestinal	↓ BETTER	7.8	8.3	8.2	7.5	7.7	6.7	6.7	8.1	7.1	8.0	8.1	7.1	9.0	9.2	8.2
		diabetes	↓ BETTER	5.38	3.9	4.7	2.0	7.9	2.2	1.7	7.6	4.5	8.3	7.6	6.1	5.8	5.9	4.3

Attribute/Theme	Indicator		Directionality	Ontario	Erie St. Clair	South West	Waterloo Wellington	Hamilton Niagara Haldimand Brant	Central West	Mississauga Halton	Toronto Central	Central	Central East	South East	Champlain	North Simcoe Muskoka	North East	North West
Effective 3.4 Keeping people healthy in long-term care	Percentage of LTC residents in 2009/10 with:	worsening bladder control	↓ BETTER	21%	25%	25%	23%	24%	19%	18%	17%	17%	19%	20%	21%	22%	23%	24%
		increasing difficulty carrying out normal, everyday tasks (getting dressed, eating, personal hygiene)	↓ BETTER	33%	38%	36%	35%	38%	31%	31%	30%	28%	31%	36%	34%	34%	34%	30%
		pain that got worse recently	↓ BETTER	12%	14%	14%	13%	14%	10%	10%	9%	9%	10%	13%	12%	13%	14%	11%
		worsening symptoms of depression or anxiety	↓ BETTER	26%	32%	30%	32%	30%	21%	24%	17%	18%	24%	30%	27%	29%	26%	25%
		recent decrease in language, memory and thinking abilities	↓ BETTER	13%	15%	15%	14%	14%	12%	14%	10%	11%	12%	11%	14%	14%	12%	9.4%
		recent unintended weight loss	↓ BETTER	7.1%	7.3%	6.8%	8.9%	6.3%	7.8%	6.3%	6.7%	7.1%	6.9%	7.2%	6.5%	8.0%	6.8%	12%
Effective 3.5 Keeping people healthy in home care	Percentage of long-stay home care clients in 2009/10 with:	bladder function has recently decreased or did not improve	↓ BETTER	50%	47%	48%	54%	52%	59%	54%	47%	55%	49%	49%	50%	53%	44%	50%
		a new problem with normal everyday tasks (getting dressed, eating, personal hygiene) OR an old problem that is not getting better	↓ BETTER	46%	45%	41%	55%	48%	60%	51%	52%	45%	46%	49%	43%	43%	41%	45%
		pain that is not well controlled	↓ BETTER	24%	24%	22%	23%	24%	22%	23%	25%	24%	24%	25%	24%	23%	20%	24%
		serious signs of depression (e.g. profound sadness, withdrawal from normal activities)	↓ BETTER	9%	6.1%	8.2%	7.6%	8.2%	11%	7.2%	12%	14%	9.8%	6.4%	8.1%	8.3%	7.0%	7.9%
		recent decline in language, memory and thinking abilities	↓ BETTER	51%	43%	47%	52%	52%	61%	47%	57%	49%	55%	54%	62%	57%	46%	50%
		new problem communicating or understanding others or an existing problem that did not improve over a period of time	↓ BETTER	17%	14%	17%	18%	18%	21%	17%	19%	16%	18%	20%	20%	19%	15%	17%
		recent unintended weight loss	↓ BETTER	4.3%	3.3%	4.2%	5.3%	5.2%	5.9%	3.8%	4.8%	2.8%	4.3%	4.3%	3.9%	6.0%	4.6%	5.1%

= better than average = not significantly different from average = worse than average

Attribute/Theme	Indicator		Directionality	Ontario	Erie St. Clair	South West	Waterloo Wellington	Hamilton Niagara Haldimand Brant	Central West	Mississauga Halton	Toronto Central	Central	Central East	South East	Champlain	North Simcoe Muskoka	North East	North West
Safe 4.3 Mortality in hospital	Adjusted death rate from heart attack per 100 patients within 30 days, 2008/09		↓ BETTER	9.6	10	10	9.3	11	10	11	10	9.8	11.5	8.9	8.7	13	14	8.2
Safe 4.4 Drug Safety in long term care	Percentage of elderly long-term care residents prescribed a drug that should be avoided in the elderly (Beers list), 2009/10		↓ BETTER	19%	21%	20%	17%	18%	18%	16%	16%	18%	19%	22%	17%	22%	22%	20%
	Incidence of new starts of antipsychotics without a clear indication in seniors newly admitted to long-term care homes, 2008/09		↓ BETTER	14%	17%	14%	10%	17%	21%	9%	10%	15%	12%	20%	11%	17%	10%	13%
	Incidence of new starts of benzodiazepines in seniors newly admitted to long-term care homes, 2008/09		↓ BETTER	24%	21%	25%	24%	28%	32%	22%	20%	25%	29%	22%	14%	31%	24%	31%
Safe 4.3 Avoiding harm in long term care homes	Rate of falls among seniors (aged 65+) resulting in an emergency department visit or inpatient hospitalization per 100 resident-years in long-term care homes, 2008/09		↓ BETTER	14.0	13	13	12	13	15	15	13	15	15	12	16	16	16	15
	Percentage of LTC residents in 2009/10 with:	a new pressure ulcer (stage 2 or higher)	↓ BETTER	2.7%	3.4%	3.1%	3.1%	3.0%	2.7%	2.5%	2.8%	2.2%	2.5%	3.0%	2.7%	2.9%	2.4%	3.7%
		behaviour that has worsened recently	↓ BETTER	14%	16%	15%	16%	15%	11%	13%	10%	10%	12%	15%	15%	15%	14%	11%
		a recent bladder infection	↓ BETTER	5.4%	5.2%	5.8%	5.4%	6.2%	5.1%	5.8%	4.4%	4.5%	4.3%	6.9%	5.8%	6.4%	5.4%	5.0%
		physical restraint	↓ BETTER	17%	22%	17%	19%	17%	9%	11%	10%	12%	18%	24%	23%	14%	20%	23%
		a fall in the last 30 days	↓ BETTER	14%	14%	15%	15%	14%	14%	14%	14%	13%	13%	14%	14%	14%	15%	14%
Safe 4.5 Avoiding harm in community	Percentage of long-stay home care clients in 2009/10 with:	a fall in the last 90 days	↓ BETTER	25%	27%	24%	27%	29%	26%	28%	23%	23%	23%	26%	25%	30%	25%	28%
		a new pressure ulcer (stage 2 or higher)	↓ BETTER	1.5%	1.7%	1.4%	2.0%	2.1%	1.7%	1.7%	1.5%	1.5%	1.2%	1.6%	1.4%	3.6%	1.2%	1.6%
		unexplained injuries, burns, or fracture	↓ BETTER	12%	10%	12%	10%	13%	11%	12%	13%	12%	12%	12%	10%	9%	13%	7%
Efficient 6.2 Right service in right place	Percentage of acute care bed days which are designated as alternative level care (ALC) 2009/10		↓ BETTER	16%	11%	12%	18%	21%	10%	9%	12%	15%	18%	17%	16%	20%	28%	18%
	Percentage of people placed into an LTC home who do not have with high or very high needs for LTC services (or care needs) as measured using the MAPLe scores, 2009/10		↓ BETTER	23%	24%	24%	20%	22%	23%	22%	23%	23%	24%	23%	20%	23%	31%	20%
Efficient 6.3 Avoidable emergency department visits	Number of non-urgent, avoidable ED visits per 100 LTC residents per year, 2009/10		↓ BETTER	21.2	22	20	14	17	26	25	24	25	23	17	21	23	20	25
	Rates (per 100 person years) of Low Acuity ED Visits by LTC Residents, 2009/10		↓ BETTER	7.8	7.9	9.8	7.4	5.9	4.4	3.4	6.1	6.2	9.1	9.2	9.4	11.4	11.3	8.1

Attribute/Theme	Indicator		Directionality	Ontario	Erie St. Clair	South West	Waterloo Wellington	Hamilton Niagara Haldimand Brant	Central West	Mississauga Halton	Toronto Central	Central	Central East	South East	Champlain	North Simcoe Muskoka	North East	North West
Efficient 6.4 Avoiding unnecessary drugs and tests	Rate of pre-operative chest X-ray testing per 100 cataract surgeries, 2009/10		↓ BETTER	3.93	3.1	3.1	2.6	3.5	3.7	3.9	5.3	5.7	4.5	3.4	3.5	3.3	3.4	7.4
	Percentage of elderly patients with uncomplicated hypertension treated with diuretic as first-line treatment, 2009/10		↑ BETTER	17%	13%	20%	20%	16%	19%	15%	15%	13%	14%	21%	22%	17%	19%	22%
Appropriately resourced 7.4 Health human resources	Supply, per 100,000 people, of:	family physicians, 2009		88	64	84	80	78	65	75	141	81	70	104	114	88	95	108
		specialists, 2009		99	61	110	60	102	47	62	298	70	60	112	132	55	66	71
		nurse practitioners, 2010		11	12	15	12	12	3	4	23	3	6	17	13	12	25	31
		registered nurses, 2010		713	680	929	554	736	308	474	1374	437	501	901	859	682	927	1065
		registered practical nurses, 2010		231	260	305	233	262	98	110	238	140	195	374	269	294	411	465
Integrated 8.1 Discharge/ transitions	Percentage of stroke patients discharged from acute care to inpatient rehabilitation, 2010		↑ BETTER	29%	34%	28%	25%	25%	22%	33%	28%	29%	34%	25%	29%	27%	25%	36%
Focused on Population Helath 9.1 Unhealthy behaviour	Percentage of the general population age 12 and above who report smoking, 2009		↓ BETTER	19%	21%	22%	18%	21%	14%	17%	13%	17%	18%	24%	18%	27%	26%	25%
	Percentage of non-smokers in the general population aged 12+ years who report being regularly exposed to tobacco smoke in any of their home, vehicle or in public places, 2009		↓ BETTER	18%	18%	19%	16%	18%	16%	19%	11%	18%	24%	20%	15%	21%	20%	17%
	Percentage of the population age 12 and above who: (2009)	have had binge drinking episodes	↓ BETTER	21%	22%	21%	23%	23%	14%	22%	22%	16%	17%	23%	26%	25%	24%	28%
		are obese	↓ BETTER	18%	21%	22%	17%	20%	17%	14%	13%	14%	19%	22%	19%	18%	26%	27%
		are physically inactive	↓ BETTER	49%	51%	51%	50%	45%	60%	49%	51%	52%	55%	41%	42%	42%	44%	39%
		have inadequate fruit and vegetable intake	↓ BETTER	56%	62%	61%	58%	59%	48%	51%	58%	58%	55%	54%	53%	56%	59%	58%
Focused on Population Helath 9.2 Maternal and child health	Percentage of mothers breastfeeding right after birth, 2009		↑ BETTER	88%	68%	86%	92%	80%	90%	93%	95%	92%	88%	80%	94%	82%	86%	82%
	Percentage of women who smoked during their pregnancy, 2009/10		↓ BETTER	12%	18%	18%	13%	17%	6%	6%	5%	4%	11%	24%	11%	19%	27%	36%

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Attribute/Theme	Indicator	Directionality	Ontario	Erie St. Clair	South West	Waterloo Wellington	Hamilton Niagara Haldimand Brant	Central West	Mississauga Halton	Toronto Central	Central	Central East	South East	Champlain	North Simcoe Muskoka	North East	North West
Focused on Population Helath 9.3 Sexual health	HIV incidence per 100,000, 2008	↓ BETTER	8.6	2.9	3.6	4.1	6.8	2.3	5.2	43	4.5	3.5	3.5	14	1.8	6.5	2.1
Focused on Population Helath 9.4 Preventive measures	Percent of the population aged 65+ reporting having received a flu shot in the past year, 2009	↑ BETTER	72%	77%	74%	73%	73%	69%	63%	71%	71%	76%	78%	72%	68%	73%	66%
	Percentage of women (aged 50-69) who reported having a mammogram in the last two years,2008/09	↑ BETTER	67%	69%	67%	66%	65%	62%	67%	60%	70%	68%	66%	70%	63%	67%	69%
	Percentage of women (aged 20-69) who reported having a Pap test in the last three years,2007/09	↑ BETTER	72%	68%	72%	74%	72%	69%	72%	70%	74%	72%	77%	79%	70%	71%	72%
	Percentage of people (aged 50-74) who reported having a fecal occult blood test in the 2 years prior to the survey, 2009	↑ BETTER	35%	40%	35%	40%	33%	30%	42%	25%	35%	33%	36%	41%	32%	34%	40%
	Rate of women aged 65 years who have had a bone mineral density (BMD) test since turning 55 years of age, 2009/10	↑ BETTER	81%	71%	73%	82%	85%	83%	87%	86%	88%	84%	74%	83%	84%	71%	57%
Focused on Population Helath 9.5 Deaths and harm that could be avoided by prevention	Mortality age-standardized rates per 100,000 for colon and rectum, 2003-2007	↓ BETTER	20	21	22	19	20	15	19	19	18	19	21	22	22	21	21
	AMI incidence per 100,000, 2009/10	↓ BETTER	203	237	212	219	251	202	164	150	149	198	216	194	242	282	299
	Rate of ED visits for intentional self-harm per 100,000, 2009/10	↓ BETTER	88	77	107	120	107	57	61	69	49	90	135	84	110	156	224
	Rate of injury-related ED visits per 100,000, 2009/10	↓ BETTER	8,845	9126	12964	8088	10097	6446	6665	6927	6571	8486	12815	8276	11530	13579	14913
	Rate of injury-related hospitalizations per 100,000, 2009/10	↓ BETTER	404	444	548	413	489	303	315	352	290	360	387	343	491	679	822

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12.1

Examples of success — Reducing ED waits

Organizations: Mount Sinai Hospital, a major Toronto teaching hospital; Oakville-Trafalgar Memorial Hospital, a very high volume community hospital; and Georgetown Hospital, a high volume community hospital. The two community hospitals are a part of Halton Healthcare Services.

Aims and Measures: increase the percentage of admitted and non-admitted patients treated within the recommended timeframe (four and eight hours respectively) and decrease the 90th percentile amount of time spent in the ED, for admitted patients, high-acuity non-admitted patients and low-acuity non-admitted patients.

Change Ideas:

Mount Sinai Hospital:

- Set up a Rapid Assessment Zone (RAZ) in the ED in July 2008, where an internal waiting room is used to assess patients who don't require care in a stretcher on an ongoing basis, but do require privacy for their examination or treatment. This waiting room allows patients to effectively "share" a stretcher, which speeds up processing and reduces wait times.
- Establish an "offload nurse" program where a dedicated nurse initiates care for patients who arrive by ambulance.
- Have nurses initiate diagnostic tests and interventions.
- Provide porters to help imaging technologists move patients, extend hours for CT scans, add technologists on some night shifts and work closely with Diagnostic Imaging to reduce wait times for ED patients.
- Establish the new position of Patient Flow Coordinator and support policy and process changes that have improved flow of admitted patients from the ED to in-patient units.

Oakville-Trafalgar Memorial Hospital:

- Establish a Rapid Assessment Zone similar to the above.
- Implement ED Controllers to support overburdened nurses and act as a liaison between the ED and in-patient units.
- Adjust team roles and responsibilities so each professional can focus on one area of ED care; for example, having a Medical Lab Assistant initiate laboratory tests, manage flow or process orders — tasks previously completed by overburdened nurses.
- Host weekly ED Operations meetings or ongoing audits to address progress and barriers.

Georgetown Hospital:

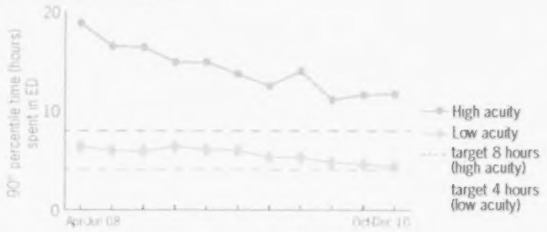
- Divide the ED into smaller units, each of which treats people with a similar acuity level, and establish a Rapid Assessment and Fast Track area similar to the Rapid Assessment Zone above.
- Establish seven additional "flex beds" and respond to peaks in demand by adjusting roles and enhancing nursing and clerical hours.
- Change the culture so that patients are thought of as being "pulled" to the floor by inpatient units rather than being "pushed" out of the ED. Inpatient units were given increased decision-making authority to augment staff based on increases in activity.

Positive engagement of front line physicians, nurses and inpatient medicine units was an important success factor for all sites.

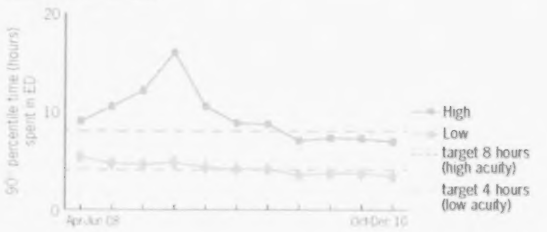
Results:

These three hospitals have achieved major reductions in ED waits, over a time period of just under three years. For low acuity patients, Mount Sinai decreased the 90th percentile time spent in the ED by 2 hours, and Oakville-Trafalgar and Georgetown decreased this time by one hour. For high acuity patients, Mount Sinai dropped the time spent in the ED by 7.1 hours, a decrease of more than a third. Oakville-Trafalgar and Georgetown decreased this time by 2.1 and 1.4 hours respectively.

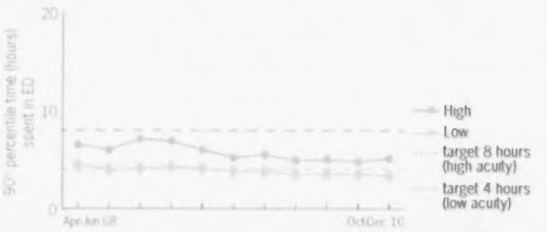
Mount Sinai Hospital



Oakville-Trafalgar



Georgetown



Leading Results in Ontario, October-December 2010:

Other hospitals in Ontario can aim to meet or exceed the results achieved by these organizations:

Hospital	Type	90th percentile length of stay		Percentage of patients treated within recommended time frame		
		Low acuity	High acuity	Admitted patients	Non-admitted high acuity patients	Non-admitted low acuity patients
Mount Sinai	Teaching hospital	5.1 hrs	13.2 hrs	32%	91%	85%
Oakville-Trafalgar	Very high volume community hospital	3.7 hrs	6.9 hrs	72%	100%	95%
Georgetown	High volume community hospital	3.7 hrs	5.1 hrs	93%	100%	95%

12.2

Examples of success — Primary care

Organizations:

- The North York Family Health Team (FHT), a large interdisciplinary team which includes 56 physicians, nurses, nurse practitioners, pharmacists, social workers and dieticians. The FHT serves 54,000 patients across nine locations in North York.
- The Smithville Medical Centre Family FHT, which includes 8 family physicians and nursing staff, and serves the small community of Smithville, just southeast of Hamilton.

Aims and measures:

- Reduce wait times for an appointment, as measured by the time to third next available appointment.
- Maintain the total time spent by a patient in the office from arrival to departure ("office cycle time") to under 60 minutes.
- Ensure at least half of the time spent by a patient in the office is actually spent with a provider (the "50% Red Zone Time" target).
- Improve physician continuity so patients see their own provider at least 85% of the time.

Change Ideas:

Ideas related to scheduling include:

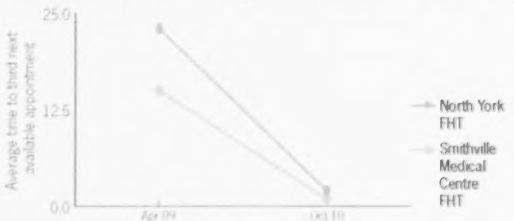
- Monitoring the supply and demand for appointments and working continuously to ensure they are in balance.
- Temporarily creating extra appointment blocks each week to work down the backlog.
- Increasing the interval between visits for stable patients with chronic disease from four times a year to twice a year to make more room for other patients.
- Scheduling appointments early in the day to allow same-day appointments for patients who call in the morning.

Ideas to improve the efficiency include:

- Stocking each patient room with a complete set of identical supplies and equipment so providers have easy access to the tools they need.
- Investing in an electronic medical record (EMR) system to reduce documentation and file retrieval times.

Results:

Teams with improved average time to third next available appointment



The following represents results for selected physician practices within each FHT:

- Both FHTs improved the average time to the third next available appointment; at Smithville Medical Centre FHT, this wait time dropped to zero days in August 2009.
- Both FHTs surpassed the 50% Red Zone Time target, and maintained an average office cycle time of under 60 minutes.
- Both FHTs exceeded the 85% physician continuity target; in particular, North York FHT has achieved almost 100% since April 2010.

Each FHT is currently in the process of spreading these improvements to all physicians and patients within the practice.

12.3

Examples of success — Surgical wait times

Organization: North York General Hospital

Aims and measures: Maximize the percentage of patients who receive their surgery within the recommended wait time, for hip and knee replacement, cataract, general and cancer surgery.

Change Ideas:

- Develop an online booking system to reduce errors and delays due to lost paperwork, illegible writing or incomplete information.
- Provide training to surgeons' administrative assistants on how to complete bookings. This includes on-site visits, phone training, and FAQs (frequently asked questions) and is repeated when there is turnover of these assistants.
- Review submitted cases daily to validate if cases have been entered correctly. If there is a problem, the surgeon's office is notified immediately.
- Continuously follow up with 84 surgeons' offices to identify and address quality issues, such as entering bookings on time, assigning correct priority levels, entering patients' unavailable dates, etc.
- For cancer surgery, have multidisciplinary cancer conferences to allow case review, improve care and ensure the right care is provided at the right time.
- Use wait times funding to help fund a dedicated wait times strategy co-ordinator to develop and track action plans to support programs to meet identified targets and monitor the booking schedule.
- Deploy a comprehensive bed management system that is updated every four hours, to track which beds are available at any moment and establish standard protocols to put the right patient into the right bed. This helps prevent situations where a surgical case is cancelled at the last minute because no beds are available.
- Ensure there is the right capacity to meet demand. Wait Times Funding has been used to increase operating room time and new surgeons and other health professionals have been added to meet increases in demand.
- Have a Surgical Program Director present quarterly reviews to all members of the Surgical Program to celebrate successes, initiate discussions to review barriers and implement action plans to improve results.

Results:

North York General now ensures that 100% of patients in all priority categories and all types of surgery are served within the recommended timeframe.

Surgery Type	Percentage of patients in all priority categories served within recommended timeframe	
	July-September 2009	July-September 2010
General Surgery	100%	100%
Cancer Surgery	100%	100%
Cataract surgery	100%	100%
Hip replacement	100%	100%
Knee replacement	100%	100%

12.4

Examples of success — MRI wait times

Organizations: Windsor Regional Hospital (a very large community hospital with two campuses), and St. Joseph's Health Care, London.

Aims and measures: Reduce the 90th percentile wait time for MRI scans.

Change Ideas:

Windsor Regional Hospital applied Lean methods to MRI scans. They conducted value stream maps, identifying each step in the process, waits between steps and error rates at each step. They found major inefficiencies, including incomplete requisitions sent in by ordering physicians. Radiologists need accurate information about the patient's clinical condition in order to select the right protocol (e.g. the areas to be scanned and whether contrast dyes, drugs or procedures need to be administered). If this information is missing, then the test is delayed. Staff made multiple phone calls to correct information and sometimes re-booked patients multiple times. Also, when patients were left not knowing their appointment time due to the above delays, they would call the office for information, which in turn wasted more staff time. Ideas for improvement include:

- Revising the requisition form for ordering an MRI, to clarify the exact information that ordering physicians needed to communicate to the radiologist.
- Tracking which ordering physicians repeatedly sent in incomplete requisitions and having them re-submit — which puts the onus on them to get it right the first time.
- Using an electronic scheduler system to make it easier to track appointment times.
- Informing patients of the time period within which they could expect to receive an appointment time, which reduced unnecessary phone inquiries.
- Ensuring that there was consistent coding of priority levels for scans.
- Booking scans on a first-in first-out basis.

Windsor also uncovered wasted time in planning and performing scans. Ideas included the following:

- Standardizing protocols. This reduced the time radiologists spent on designing the protocols, decreased the use of contrast dye (which is costly and adds extra time), and shortened the average time per patient by decreasing the number of unnecessary scans that were sometimes included in protocols.
- Booking similar body parts on same day, to reduce set-up time to change coils on the machine for doing a different body part.
- Booking more complex cases during the day, with later hours used for priority 4 cases when additional resources are not required.

St. Joseph's Health Care, London participated in the provincial MRI process improvement project, and also applied LEAN techniques. It found that it took too long to book the test after receiving a requisition; that the time booked for a scan often didn't match the actual time required, leading to idle scanner time; and wasted staff time due to unnecessary interruptions or looking for supplies. Ideas for improvement include:

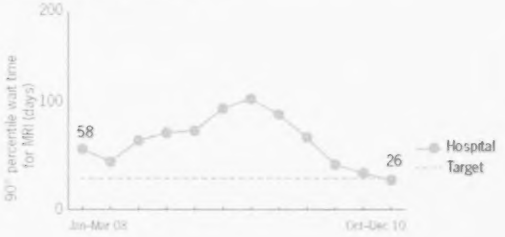
- Streamlining the booking and protocol-setting process, which decreased booking time from 13 to 1.5 days.
- Improved scheduling, which better matched the expected time to do a scan with the actual time.
- Better organization of supplies to reduce wasted time searching for them.

St. Joseph's also added a second scanner, which added about 10% extra capacity. (Before, one scanner was used around the clock and weekends; afterwards, two scanners were used 16 hours per weekday).

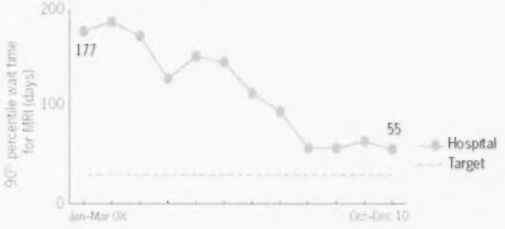
Results:

Windsor regional hospital has cut its 90th percentile MRI wait times by more than half, and St. Joseph's Health Care has dramatically reduced its waits to less than a third of what they used to be in early 2008.

Windsor regional Hospital



St Joseph's Health Care, London



12.5

Examples of success — Chronic disease management

Organizations: Petawawa Centennial Family Health Team (FHT), which serves 15,000 people, and Timmins FHT, which has 24 family physicians and five nurse practitioners.

Aims and measures: Improve management of type 2 diabetes, including improving screening to prevent vascular complications, ensuring appropriate treatment and encouraging self-management. Specific targets are noted in the results table below.

Change Ideas:

Both of these sites implemented a variety of changes related to the redesign of how care is delivered, including:

- an electronic medical record (EMR);
- a diabetes patient registry;
- an electronic diabetes flow sheet to remind providers to follow and document the use of evidence-based practices at each visit;
- a patient follow-up system to ensure that patients are routinely notified of when follow-up appointments need to take place so that no one misses them;
- use of group medical visits, developed from Impact BC's model, where participants with diabetes learn in a group about lifestyle improvements, healthy living, interpretation of lab tests and how to set personal goals; and,
- promotion of chronic disease self-management. At Timmins, the Registered Nurse Program Lead was responsible for championing this approach and documenting patient self-management goals.

Timmins also worked to ensure diabetes patients are booked close to their birthday for an annual physical, during which a comprehensive care plan is developed. Petawawa also reorganized work flow so that lab work would routinely be done ahead of scheduled appointments, not afterwards.

Results:

The following represents results for pilot sites within each FHT. Each FHT is currently in the process of spreading these improvements to all physicians and patients within the practice.

			Petawawa Centennial FHT			Timmins FHT		
Measure	Percentage of diabetes patients with:	Target	Baseline (May 2009)	Most recent value (October 2010)	% relative improvement	Baseline (June 2008)	Most recent value (September 2010)	% relative improvement
Process	A1C test in past six months	>90%	37%	78%	111%	89%	90%	1.1%
	Retinopathy screening in past 24 months	>90%	27%	28%	6.4%	63%	60%	-5.7%
	Comprehensive foot exam in past 12 months	>90%	11%	40%	281%	85%	73%	-13%
	Microalbuminuria screening in past 12 months	>65%	8.1%	84%	935%	85%	71%	-16%
Outcome	A1C ≤ 7	>60%	39%	51%	30%	56%	63%	12%
	LDL ≤ 2.0 nmol/l	>65%	0.0%	39%	∞	39%	60%	52%
	BP ≤ 130/80	>55%	71%	65%	-8.1%	56%	83%	47%
	On ACEI or ARB	>60%	53%	69%	29%	79%	78%	-0.6%
	Patients have at least one self-management goal in 12 months	>70%	16%	34%	111%	69%	85%	23%

12.6

Examples of success — Congestive heart failure readmissions

Organization: Ottawa Heart Institute

Aim and measure: Reduce 30-day readmissions for congestive heart failure

Change ideas:

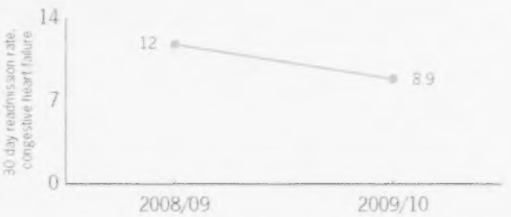
Ottawa Heart Institute aimed to improve transitions from acute to primary care and follow-up in the community, by doing the following:

- Provide patients with written discharge checklists and ensuring patients understand instructions for their care.
- Use electronic health records (EHRs) to transfer medical information to the primary care provider and/or the patient.
- Promote and teach patient self-management.
- Employ tele-homecare technology to monitor cardiac patients at home. Patients who meet pre-set criteria (e.g., having complex heart failure, acute arrhythmia or complex cardiac surgery) receive home monitors which can transmit information such as vital signs over the phone.
- Employ interactive voice response technology to monitor symptoms, adherence to treatment and lifestyle issues like smoking cessation. Patients receive automated phone calls at regular intervals with a pre-set series of questions. If the response indicates a worrisome problem, the call is flagged and the patient receives a call back from a member of the care team. If the response indicates a high-risk symptom (e.g. chest pain or shortness of breath), the system holds the patient on the line and connects him or her directly to medical staff.

Results:

Ottawa Heart Institute has seen a 24% reduction in CHF readmission rates from 2008/09 to 2009/10.

Ottawa Heart Institute — Congestive Heart Failure Readmission Rates 2008/09 - 2009/10



12.7

Examples of success — Ventilator-associated pneumonia, central line infection and c. difficile infection

Organizations: Collingwood General and Marine Hospital, a large community hospital.

Aims and measures:

Reduce:

- Ventilator-associated pneumonia (VAP) rate per 1,000 bed days on a ventilator;
- Central line infection (CLI) rate per 1,000 bed days on a central line; and,
- Rate of hospital-acquired *C. difficile* infection per 1,000 bed days.

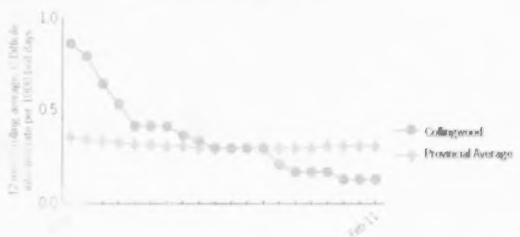
Change Ideas:

- Develop a strong culture of patient safety. In 2009, the hospital launched the "Single Safety System" initiative with a vision, *"an inclusive and pervasive culture of safety supported by leadership and owned by all."* Activities to nurture this culture include:
  - Creating an infection prevention and control (IP&C) service, with a coordinator who reports to senior management, and "Super Users" and "Unit Representatives" who provide front-line integration and organizational support to ensure concerns can be raised in a timely manner. These peer leaders are trained through IP&C and provide 'role modeling' and just-in-time information and training at the departmental level.
  - Patient safety walkabouts, where senior leaders interact regularly with front-line staff on safety issues.
  - 'Safety Boards' in each department and monthly open forums called 'Safety Salutes', where information on infection rates and prevention tips are communicated to frontline staff and progress on reducing infections is celebrated.
- Embed, into the hospital's electronic medical record, a VAP screening tool to ensure consistent daily screening for VAP cases and a 'ventilator round sheet' to ensure consistent patient assessment and documentation. These tools help ensure all standard care practices are implemented (i.e. use of subglottic drainage endotracheal tubes, elevation of head of bed, monitoring of cuff pressures, daily sedation vacations and spontaneous breathing trials to ensure patients are extubated in the most timely manner possible).
- Develop standard protocols for eliminating CLI, and build a daily assessment screening tool into the electronic documentation system.
- Implement a Hand Hygiene Campaign, including the installation of additional hand rub stations using staff input for optimal placement to facilitate use according to workflow.
- Ensure early detection of C. Difficile cases, by emphasizing through IP&C the importance of early specimen collection and reducing lab turnaround time through a change in the hospital's external lab partner.
- Improve procedures for isolation. All patients with symptoms of diarrhea are isolated immediately. Isolation room signage was simplified to improve understanding and compliance. A patient/care provider video was implemented for education regarding precautions.
- Improve cleaning procedures. All isolation rooms are cleaned twice a day with Virox. Spray wands were removed from washrooms (as they can inadvertently splash contaminants throughout a room) and disposable toilet brushes were added. For patients using bedpans and commodes, gel liners are used for all cases with diarrhea.

Results:

Collingwood's C. Difficile infection rate has declined steadily over the past two years. The hospital has also had zero cases of CLI since January 2009 and zero cases of VAP since October 2009.

Collingwood — C. Difficile Infections



12.8

Examples of success — Alternative level of care

Organizations:

– London Health Sciences Centre — University Hospital site, a major teaching hospital.

– Halton Healthcare Services — a very-high-volume community 3 site hospital.

– St. Thomas-Elgin General Hospital — a high-volume community hospital.

Aims and measures:

To reduce the percentage of acute care bed days that are designated as alternative level of care (ALC).

Change Ideas:

London Health Sciences Centre — University Site

- Working with St Joseph's Health Care and SW CCAC to create a transitional care unit at Parkwood Hospital to provide short-term restoration care in an in-patient environment that enables individuals to return to the community.
- Working with CCCACs and home care organizations on initiatives such as:
  - o "Safe at Home", which adds additional service levels, allowing individuals to avoid hospital or be discharged earlier
  - o "Wait at Home", which provides personal care services to enable ALC patients who are waiting for LTC to wait at home

Halton Healthcare Services

- Adopting the Home First strategy, including enhancing community resources, changing workflow processes, encouraging greater collaboration among healthcare team members, the hospital and community CCAC teams, and actively promoting a shift in culture regarding the care and flow of elderly patients.
- Introducing a Joint Discharge Operations Group, comprising the manager of social work and discharge planning, the hospital's chief operating officer and the community care access centre (CCAC); the group reviews every ALC patient and potential ALC patients, initiates early referrals to the CCAC, discusses options for discharge and ensures that each patient has a clear discharge plan.

St. Thomas-Elgin General Hospital

- Partnering with organizations such as CCACs on quality improvement activities aimed at improving transitions from acute care to subsequent care destinations, including the "Home at Last" and "Wait at Home" programs, and the FLO Collaborative, which reduced and sustained a one-day reduction in length of stay in the acute medical unit
- Implementing the Medworxx utilization management system, which monitors each patient daily to evaluate the level of care requirements (acute care, rehabilitation, complex care, or home independently or with community supports)
- Using a bed optimization system or electronic bed board to obtain real-time data on bed availability throughout the organization
- Participating in the 4th wave of the Ministry of Health, Emergency Department Process Improvement Program (ED-PIP) to improve patient flow through the ED and reduce the wait time for admission to acute care
- Participating in the Rapid Emergency Assessment for Community Transition project to divert patients who are medically stable from hospital's emergency department, preventing hospital admissions and facilitating the patient's safe return to home or redirection to alternative settings

Results:

All three hospitals have shown reduction in the percentage of acute care bed days that are designated as ALC. In particularly, Halton Healthcare Services Corporation — Oakville site and St. Thomas-Elgin General hospital had a relative improvement of over 50%.

Percentage of acute care bed days that are designated as ALC

13 Endnotes

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The functions of Health Quality Ontario are:

(a) to monitor and report to the people of Ontario on,

(i) access to publicly funded health services,

(ii) health human resources in publicly funded health services,

(iii) consumer and population health status, and

(iv) health system outcomes;

(b) to support continuous quality improvement;

(c) to promote healthcare that is supported by the best available scientific evidence by,

(i) making recommendations to healthcare organizations and other entities on standards of care in the health system, based on or respecting clinical practice guidelines and protocols, and

(ii) making recommendations, based on evidence and with consideration of the recommendations in subclause (i), to the Minister concerning the Government of Ontario's provision of funding for healthcare services and medical devices.

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